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ABSTRACT

This is the first volume in a series that includes the syllabi for advanced elective courses in art education for grades 10, 11, and 12. The course objective is to provide a multiplicity of visual experiences in the drawing and painting areas of the graphic arts and photography that are broad in scope and that will challenge the student's ability and raise his creative potential to the highest level possible. Teaching techniques include teacher demonstrations, classroom discussion, hands on experiences with pen and ink sketching, contour and gesture drawing, encaustics, oil painting, printmaking, photography and various other art forms. The guide consists of three main sections: (1) Studio in Drawing and Painting; (2) Studio in Graphic Arts (Printmaking); (3) Studio in Photography Course. A description, student objectives, background reading for teachers or students, and suggestions for teacher demonstrations, classroom discussions, and student activities are provided for each section. Evaluation methods and suggested supplementary readings are also included. (Author/RM)

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graphics
photography

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volume one
advanced elective courses in art for grades 10, 11, or 12

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BUREAU OF SECONDARY CURRICULUM DEVELOPMENT / ALBANY, NEW YORK 12234
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ACKNOWLEDGMENTS

Examples of student art have been used whenever feasible to illustrate concepts and processes included in this volume.

Sincere thanks are extended to the following schools for their contributions:

Photographs of Student Art:

Studio in Drawing and Painting

Afton Central High School, Afton
Brentwood High School, Brentwood
Chenango Valley High School, Chenango Valley
Cicero High School, North Syracuse School District
Kenmore West Senior High School, Kenmore
Kingston High School, Kingston
Lindenhurst High School, Lindenhurst
Linton High School, Schenectady
Mount Kisco High School, Mount Kisco
Newark High School, Newark
Northport Senior High School, Northport

Studio in Graphic Arts

Bethlehem Central High School, Delmar
Brentwood High School, Brentwood
Cicero High School, North Syracuse School District
High School of Music and Art, New York City
Holley Junior Senior High School, Holley
Newark High School, Newark
Niskayuna High School, Niskayuna
Niagara Wheatfield High School, Sanborn

Studio in Photography

Board of Cooperative Services, Northern Westchester
Technical Center, Yorktown Heights
Deer Park High School, Deer Park
Ellicottville High School, Ellicottville
Kenmore East Senior High School, Kenmore
Niskayuna High School, Niskayuna

THE VISUAL ARTS

Exploring the Visual Arts

An exploratory course intended to meet the general art requirement for students in grades 7 and 8 by enabling them to experiment with the various forms and media of the visual arts in the contemporary world

COMPREHENSIVE FOUNDATION COURSES

Creative Crafts

A year-long introduction to the fundamentals of 3-dimensional design through the creation of crafts in various materials

Studio in Art

A year-long introduction to the nature, function, and techniques of the visual arts in the present and in the past

Art History and Appreciation

A year-long introduction to man's creative use of the visual arts throughout history, with constant reference to the present and implications for the future

Mechanical Drawing and Design

A year-long introduction to a universal graphic language through which students can express their ideas with creativity, clarity, and exactness

ADVANCED ELECTIVE COURSES*

- Studio in Ceramics
- Studio in Sculpture
- Studio in Jewelry and Silversmithing
- Advanced Creative Crafts
- Independent Study

- Studio in Drawing and Painting
- Studio in Graphic Arts
- Studio in Advertising Design
- Studio in Fashion Design and Illustration
- Studio in Jewelry and Silversmithing
- Studio in Product Design
- Studio in Stage Design
- Studio in Interior Design
- Studio in Sculpture
- Studio in Ceramics
- Studio in Photography
- Cinematography
- Independent Study

- Ancient Art
- European Art
- NonEuropean Art
- Modern Art
- Art of the Americas
- Architecture Through the Ages
- Esthetics and Art Criticism
- Independent Study

- Advanced Mechanical Drawing and Design
- Architectural Drawing and Design
- Industrial Design
- Urban Design and Community Planning
- Independent Study

*Titles enclosed in dotted lines are suggestions for locally developed advanced elective courses.

*Minor changes in titles have been made since the publication of STUDIO IN ART—A COMPREHENSIVE FOUNDATION COURSE.

FOREWORD

This is the first volume in a series that includes the syllabuses for the advanced elective courses in the art program for grades 10, 11, and 12.

Volume I

Studio in Drawing and Painting
Studio in Graphic Arts
Studio in Photography

Volume II

Studio in Sculpture
Studio in Ceramics
Studio in Jewelry and Silversmithing

Volume III

Studio in Advertising Design
Studio in Fashion Design and Illustration
Studio in Product Design
Studio in Stage Design

As with the other electives, those in this volume may be offered for one unit of credit to students who have earned credit in the basic course, *Studio in Art*. This credit may be applied as part of the three-unit, major sequence in art. See the flow-chart of the art program on the facing page.

The following consultants were involved:

Studio in Drawing and Painting
Studio in Graphic Arts

Minerva Markey, supervisor of art, Niagara-Wheatfield Central Schools, prepared the original materials for each of these courses of study.

Ernest Andrew Mills, associate in the Bureau of Art Education, authored several sections.

Vincent J. Popolizio, chief of the Bureau of Art Education, and James V. Gilliland, associate in the Bureau of Art Education, provided additional materials.

Studio in Photography

John Boder, art teacher, Ossining High School wrote the first draft.

Denise Kaplan and Jared Fast, photography instructors at Deer Park High School, reviewed the manuscript and made meaningful suggestions for inclusion.

The new syllabuses were prepared under the general direction of Mr. Popolizio. The draft materials prepared by the writing consultants indicated above were further supplemented and revised by Mr. Mills and Harold Laynor, formerly associate in art education, now on the faculty of Millersville State College, Pennsylvania. The layout of the publication was planned by Mr. Gilliland.

The curriculum responsibility for preparing the preliminary drafts for publication was carried out by Richard G. Decker, formerly associate in Secondary Curriculum, now retired. Robert F. Zimmerman, associate in Secondary Curriculum, coordinated the final revisions and prepared the materials for publication.

GORDON E. VAN HOOFT, *Director*
Division of Curriculum Development

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Studio in Drawing and Painting

COURSE DESCRIPTION

This is an advanced course for grade 10, 11, or 12 which may be elected after a student has completed *Studio in Art*, and desires to participate in advanced study in the area of drawing and painting.

The first section of the program should develop a foundation of exploratory experiences in drawing and in painting. This introductory phase should introduce the student to a wide variety of experiences in these media before he selects a particular medium for concentrated effort.

The remainder of the year should be devoted to building a strong background in the student's chosen area of concentration. A class might be divided into groups working in different media at the same time — some in oils, some in acrylics, and still others in drawing.

Although it is possible for a student to choose more than one medium, the teacher must decide whether the student is capable of handling diverse media without losing depth in an area of concentration.

While this advanced course encourages freedom and individual study, it is vital that the teacher continually observe and guide the working stages as they progress. The teacher's demonstration and motivation are important to the total teaching process, but individualized guidance is essential to the learning experience. The teacher must determine when guidance is and is not needed. If the teacher is in doubt, it is better to offer assistance than to let the student flounder.

In some high schools it may be necessary to schedule drawing and painting for one semester rather than a full year. The teacher in this instance should adjust the course so that some experiences are included in each of the many media described in this publication.

Advanced courses in drawing and painting may be organized on an individual or independent study basis in a specified medium. Since these will be highly specialized and individualized courses, they must be developed on a local basis. Application for approval of locally developed courses should be submitted by the school principal to the Bureau of Secondary Curriculum Development, New York State Education Department. Two copies of the course description should be included with three copies of the official application form available from the Bureau.

STUDENT OBJECTIVES

This course of study should provide a multiplicity of visual experiences in the areas of drawing and painting that are broad in scope and that will challenge the student's ability and raise his creative potential to the highest level possible. It should also:

- Encourage a personal approach and interpretation, as well as develop related skills and techniques
- Assist the student in forming value judgments of diverse form and scope, of his own work and the work of others
- Provide opportunities to explore and use a wide variety of materials and tools, and at the same time develop an interest, respect, and responsibility for their use and care
- Offer opportunities for the student to take part in planning art activities suitable to his expanding aptitudes and interests

Students should keep a notebook of classwork and research, and a portfolio containing sketches and examples of artwork that reflects a variety of styles, media, and content.

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INTRODUCTION TO DRAWING

Drawing is a basic skill. It is the result of disciplined selective vision coupled with sensitive sensory perception and motor control gained and maintained through constant practice. Drawing is an abstract device achieved by graphic means — line, form, dot, and space — by which man has attempted to record a semblance of his observations and ideas. Looking, analyzing, discovering, thinking, feeling, doing — all are necessary in the act of drawing. Through experimentation, exploration, reflection, and understanding of the limitations and potentialities of many drawing materials, confidence will be gained.

One of the most important elements in drawing is line. Traditionally it is a mark made by a tool such as a pencil or a brush, which goes in a direction or encompasses a shape. A line may be straight, curved, wiggled, twisted, broad, fine, thin, bold, short, long, interrupted, or stopped. A line may define a form or texture, create a mood, or be beautiful in itself.

All drawing is an illusion of some percept of reality, visual or intellectual.

Pastels and Charcoal

Pastels are made by combining pigment with a binder made of gum tragacanth. Students should know that pastels are usually prepared in soft, medium, and hard grades and that when properly used and protected, they can be used as a permanent drawing medium.

With any pastels, color can be applied over color, used in spontaneous strokes, or blended.

Charcoal is a black or dark, porous carbon, usually prepared from wood, and used in a refined state as a drawing tool. The charcoal stick has a wide variety of uses. It may be sharpened to produce a fine line, used flat to cover broad areas, or it may be blended. It is useful for detailed drawings or bold quick sketches. The sticks come in soft, medium, and hard consistencies.

The paper selected for pastels and charcoal must have enough grain, or tooth, to file off and retain particles of pastel. Students should be encouraged to use free, large strokes and to attempt bold blending of values and colors.

In charcoal and pastel drawing, the eraser becomes a drawing tool. For this purpose the kneaded rubber or plastic eraser may be used.

All finished charcoal and pastel drawings should be protected by a plastic or fixative spray.

Demonstration and Discussion

If the teacher wishes to encourage student use and experimentation, she might include stumps, chamois skins, erasers, a shallow pan of water, tempera paint, plastic jars, crayons, ink, and charcoal.

Place these media and a variety of papers on the demonstration table. Show and discuss briefly several methods of using charcoal and pastels. Include spontaneous and free drawings created with these materials, and show how they may be intermixed with other media.

Studio Experiences

The student should be encouraged to

- Experiment with several different methods of using chalk or pastels using subject matter from the sketchbook, and explore the potentials of the charcoal or pastel media.
- Use charcoal and pastels to work out character sketches from a student model. Unique costumes from the drama group wardrobe might be used for variety and color.
- Set up an unusual still life for either a charcoal or pastel drawing.
- Use charcoal or pastels in large, bold strokes to draw a composition suggested by views from the art room window.
- Examine the paintings of Pablo Picasso, Juan Gris, and Georges Braque for style, composition, and technique.
- Select a method of using chalk or pastel in combination with other media to emphasize textural effects.
- Illustrate individual reaction or attitudes toward a particular concern of government or society.

Pencil

Demonstration and Discussion

The teacher may wish to display on the demonstration table a variety of types and grades of pencils (graphite, carbon, chalk, charcoal, pastel, lithograph, conte); assorted types of papers with a variety of surfaces; spray fixatives; and erasers. Explain the unique characteristics of each material, including the specific quality of papers for particular types of art work (charcoal paper, lithograph paper, rice paper for printing, and drawing papers of various textures and qualities).

- Demonstrate how the paper used will affect the character of the drawing.
- Demonstrate how white chalk pencil may be used for highlights on charcoal drawings.
- Show how the eraser can be used to enhance a drawing.
- Emphasize the importance of protecting drawings with a fixative or other similar product.
- Demonstrate the many ways in which the pencil can be used to enhance the line and the tone of a drawing.
- Show how each medium can be rubbed or blended with the finger, stump, a wad of blotting paper or chamois leather, and spread with cotton, wool, or facial tissue.
- Try these demonstrations on papers of various qualities and textures. After the demonstration, encourage the students to test and explore the materials.

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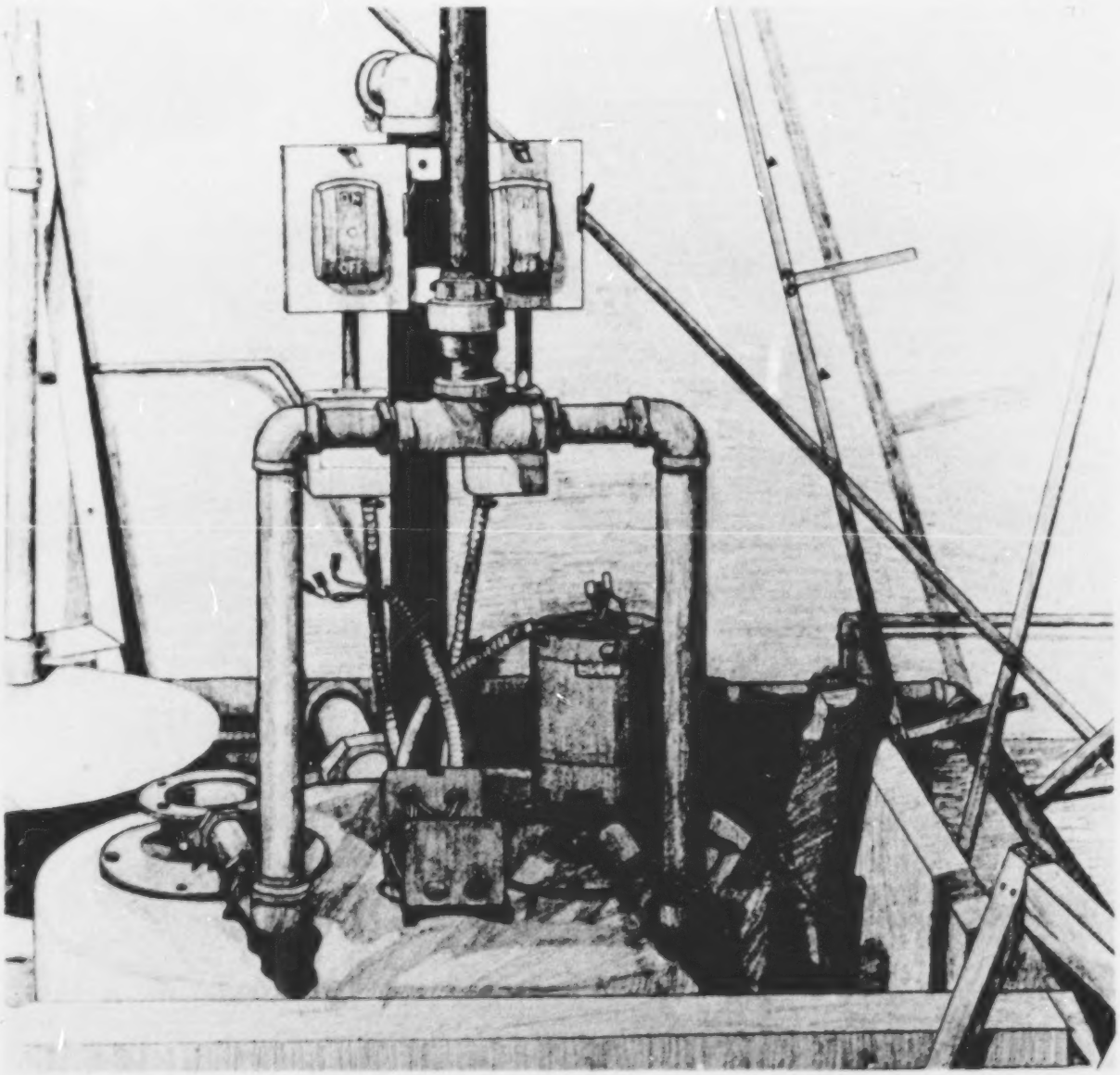
Studio Experiences

The student might

- Crumple a piece of 9" x 12" drawing paper and draw a picture of it, using accented lines.
- With a graphite pencil, sketch the hand in different positions.
- Sketch any object with a combination of charcoal pencil and chalk pencil on small sheets of colored charcoal paper. The charcoal could represent the dark areas, and the chalk the highlights. Value changes might be expressed through blending.
- Use pastel pencil on dark paper to draw a series of 5-minute sketches of a student model.
- Try a contour drawing with chalk pencil on colored construction paper, or with colored pencils on contrasting colored paper.
- Explore gesture drawing with pencil, creating the illusion of form or movement. Experiment with lines that move across and within the form as well as along the contours.
- Draw a series of distorted sketches of a model from an "ant's eye" view (as if viewed from below the model).
- Try another series from a "bird's eye" view (as if viewed from above the model).
- Sketch dried or fresh weeds, a branch with blossoms, driftwood, shells, gourds, or a combination of these.



Crayon

Students tend to associate crayon work with the wax variety they used in the elementary grades. These wax crayons are an inexpensive medium, but can also be used on the secondary level with great success. It is difficult for many students to relate the conte, lithographic, pressed, and oil crayon to the same family.

Conte crayons are short, square sticks that come in a variety of densities. This type of crayon is more difficult to erase than charcoal; however, it is apt to be more durable and is very adaptable to free and rapid sketching.

Lithographic crayons are typically made with carbon black and a fatty binder; however, the colored lithograph crayons now on the market can be purchased in the spectrum colors.

Demonstration and Discussion

- Place a variety of papers of different colors and textures on the demonstration table with examples of conte crayon (including sanguine, white, brown, and black), pressed crayons, oil crayons, wax crayons, and lithograph crayons. Also include such items as black ink or paint, blackboard chalk, a sgraffito tool, and a knife for demonstrating additional techniques.
- Have the students explore the characteristics of each of the types of crayons and papers. Suggest that they try different methods of combining media by scribbling a few lines with bright-colored wax crayons, litho crayons, or oil crayons over a sheet of drawing paper, then brushing ink or a thin coat of tempera paint over the lines, and observing the results.
- Demonstrate the scratch technique by applying a few tones of light-colored wax crayons with a fairly heavy pressure to a piece of drawing paper. Over this, apply a heavy layer of black crayon. Scratch through the black with a sgraffito tool or any other sharp tool to expose the colors beneath.
- The encaustic method has many variations. Crayon might be applied to a few areas of the board, then melted crayons of contrasting colors are dropped over these areas and also on areas where no crayon has been applied. Scratch through the wax to expose the light crayon and board. The use of encaustics can also be more fully expanded and explored as a painting process.

Studio Experiences

The student might

- Explore the possibilities of conte crayon while drawing from a student model. Use the side as well as the edge of the crayon.
- Experiment with encaustics. Choose a subject and prepare a design to be executed by this process, emphasizing the textural and luminous color effects of the medium.
- Select a few drawings from the sketchbook and try conte crayon in a landscape, a still life, or figure drawing.
- Try other methods of using the scratch technique, perhaps in a self-portrait or a landscape.

Ink and Felt-tip Pens

Ink may be applied with various tools such as a penholder and penpoint, crowquill pen, bamboo pen, brush, stick, cardboard strip, string, or bottle stopper. Ink can be applied to dry or wet paper. When it is applied to dry paper in line, it usually possesses a highly expressive quality. If applied by brush or a similar tool, either dry or wet, a great variety of tone quality may be achieved.

A waterproof black or colored india ink is commonly used for drawing, but regular writing ink is also satisfactory for many techniques.

A felt-tip pen is an excellent drawing tool. The fluidity of line and tone, the transparency, and the freedom with which it can be applied, make this tool a highly expressive drawing medium. It can also be combined with other media such as chalk, pastels, and watercolors very successfully. Felt-tip pens are available with both permanent or water-base ink.

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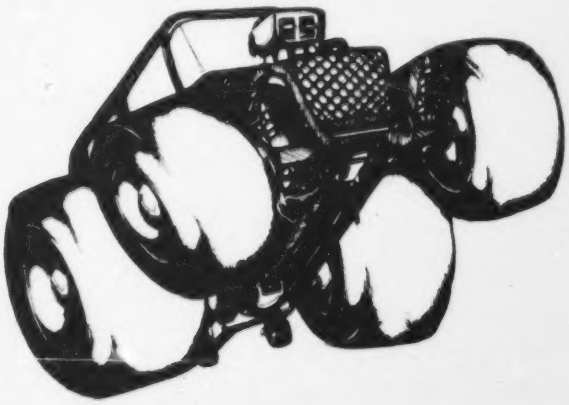
Demonstration and Discussion

- Demonstrate and discuss the method of applying india ink to a dry surface by using a variety of tools on different types of paper, emphasizing the particular quality of dryness and fluidity of ink.
- Demonstrate ink on wet paper by working with a brush, pen, and ink on a paper which has been completely immersed in water. Other details may be added as the paper gradually dries.
- Show how values of the ink may be changed by water. Emphasize spontaneity. Show how the type of paper affects various characteristics of the ink.
- Demonstrate and discuss the method of using brush and ink. Emphasize dry brush, wet brush, semimoist brush, and a combination of these techniques. Stress the importance of selecting the right brush for the job.
- Demonstrate the various techniques for using the felt-tip pen, the various angles or positions for holding it, and how to achieve various effects. Areas of pastel, chalk, or watercolor might be combined with the felt-tip pen for variety.



Studio Experiences

The student might

- Use india ink and a drawing pen to make several sketches of driftwood. Emphasize the physical characteristics of the wood itself.
- Practice sketching one object in several different positions.
- Make pen and ink sketches from nature, emphasizing overall mood through a particular center of interest.
- Explore the possibilities of ink on a wet surface. When the edges of the ink begin to flow and creep, try to visualize images of fantasy which might be developed into a composition.
- Set up a still life of interesting objects as a point of departure, and with a felt-tip pen, make a contour drawing with one continual line.

Independent Studio and Research Projects

- Using the sketchbook as a source, do several sketches in pen and ink or brush and ink, using large, light, watercolor wash areas.
- Use a felt-tip pen for a contour drawing or design that emphasizes motion.
- Do a series of quick sketches from nature, such as birds or animals. When the sketches are completed, brush on a light-colored wash in bold strokes to emphasize the simple action in the drawing.
- Sketch a detailed self-portrait in one of the ink techniques explored earlier.
- Try a quick sketch with watercolor and ink, using bold shapes, areas, and lines.
- Study the drawings of famous artists such as Dürer, Degas, and Michelangelo.
- Analyze and study the styles of Juan Gris and Pablo Picasso. Examine the overlapping shapes, the forms broken up into flat planes, the illusion of shallow spaces, and the blending of tone. Think of a medium and method that could be used to produce a cubistic design. Develop a composition in charcoal, chalk pencil, or a combination of these.
- Sketch a group of figures in motion — perhaps students leaving school, waiting for a bus, or watching a basketball game.

- Select an athletic theme such as wrestling, football, basketball, or track. Rough out a page of drawings sketched from life while teams or individuals are practicing.
- Try a cubistic composition with a predetermined idea in mind, such as an abstraction of figures, animals, still life, or music. Experiment with textured papers until the desired effect is reached. This could be developed into a large finished drawing.
- Sketch a corner of the art room, a section of the interior or exterior of the school, or a dwelling. Emphasize pictorial representation through the use of perspective.
- After doing the necessary research, develop a series of activities in which crayon is used in a manner not demonstrated in class, such as rubbings, transfers, batiks.

Evaluation

- Has the student explored each of the drawing media presented?
- Has the student understood drawing as a process of discovery based on improvisation, experimentation, and as an interpretation of nature?
- Has the student developed his own individual style?
- Has he shown inventive ways of expressing himself?
- Has he shown appreciation of drawing as a skill that has been used for thousands of years?
- Has the student shown confidence in the way he expresses himself graphically?
- Is the student original and flexible in his work?
- Has the student demonstrated ability and feeling in handling the various materials presented in this course?

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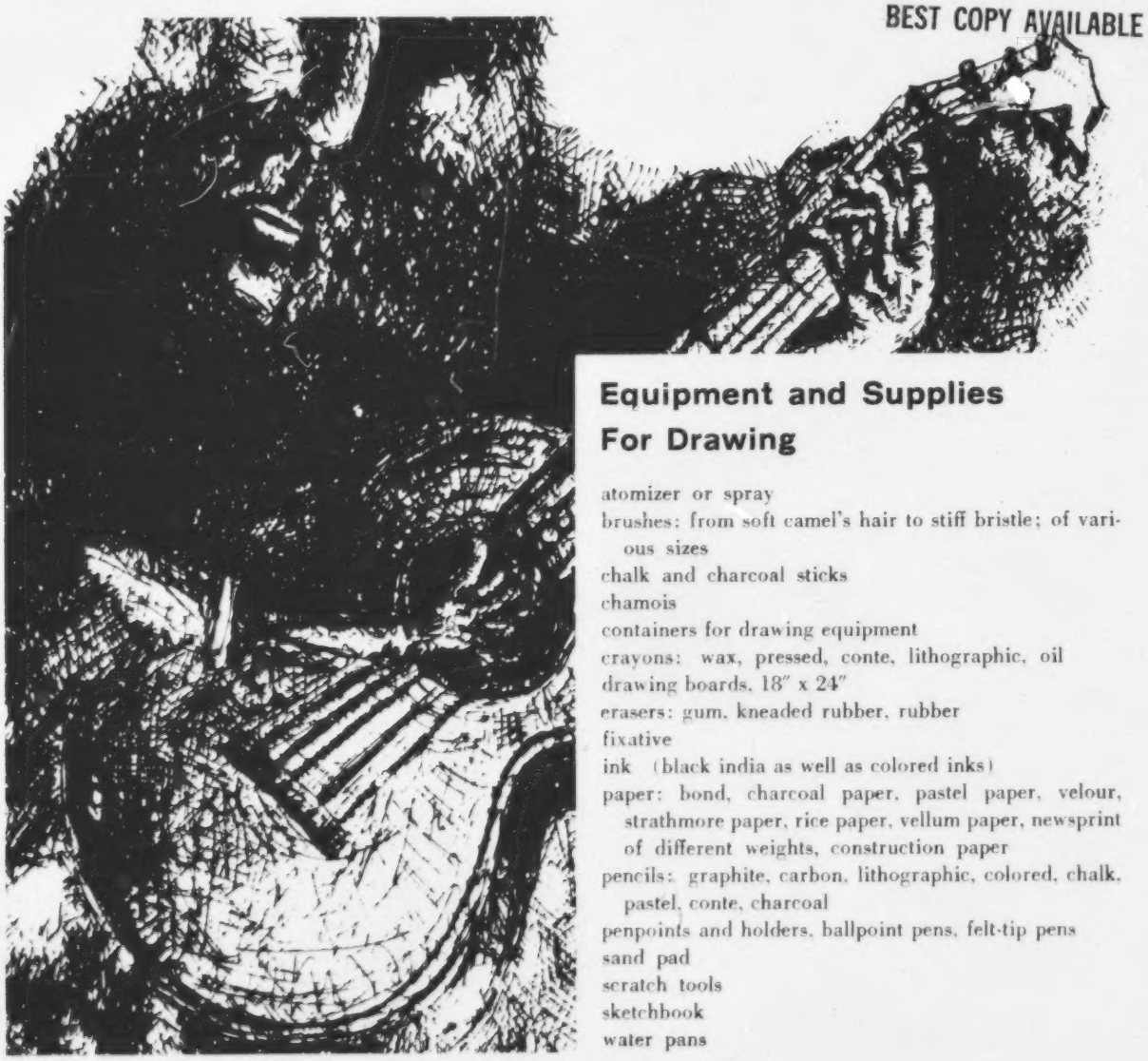

Equipment and Supplies For Drawing

atomizer or spray
brushes: from soft camel's hair to stiff bristle; of various sizes
chalk and charcoal sticks
chamois
containers for drawing equipment
crayons: wax, pressed, conte, lithographic, oil
drawing boards, 18" x 24"
erasers: gum, kneaded rubber, rubber
fixative
ink (black india as well as colored inks)
paper: bond, charcoal paper, pastel paper, velour, strathmore paper, rice paper, vellum paper, newsprint of different weights, construction paper
pencils: graphite, carbon, lithographic, colored, chalk, pastel, conte, charcoal
penpoints and holders, ballpoint pens, felt-tip pens
sand pad
scratch tools
sketchbook
water pans

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INTRODUCTION TO PAINTING

Watercolor

Watercolor is a spontaneous, free-flowing medium whose colors range from very pale to very brilliant to very deep. The traditional painter thought in terms of wetness and transparency in all watercolor. In this century, watercolor is used in a less pure manner, for it is often combined with the opaque, with inks, and with other media.

- *Transparent watercolor* is a paint in which the vehicle is a water dispersion of the binder, which may be gum or glue. It comes in tubes, semimoist pans, or in dry cakes. Simplicity and directness of approach are two basic characteristics of this medium. In this pure form, transparent watercolor wash is applied to dry, damp, or wet paper, taking full advantage of the color of the paper and typically giving the painting a bright, sparkling effect. When the wate colorist works in this direct manner he must have complete control of his design, since the first image is often the last one possible (unlike oils, in which the artist may work over the design again and again).
- *Tempera* and *gouache* are opaque watercolor paints in which various binders are used, such as egg, glue, gelatine, gum arabic, starch, or other colloidal medium. Water is used as a vehicle.

  Egg tempera was widely used before the advent of oil painting. Because tempera is opaque, the surface to be painted is usually completely covered and areas may be painted over. One distinguishing characteristic of all opaque watercolor media is their ability to render extremely fine details. When tempera is varnished, it may appear much like an oil painting.
- *Casein* paints have an alkaline solution of casein as a binder, which is produced when milk is curdled by rennet. Casein may be used as a fairly transparent medium or it may be thick and opaque, depending on the method of application. The painting surface may be smooth or textured, but must be porous. Unlike other watercolor media discussed here, casein becomes waterproof when completely set and dry.
- Suggested palette for watercolors

titanium white	raw umber
cadmium yellow light	ultramarine
cadmium orange	cerulean blue
cadmium red medium	prussian blue
yellow ochre	alizarin crimson
Hooker's green	magenta
viridian	Payne's gray
raw sienna	black
burnt sienna	cobalt blue
burnt umber	

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Demonstration and discussion

- Demonstrate and discuss the specific characteristics of each of the watercolor media — transparency, fluidity, covering power.
- Demonstrate and discuss the importance of the characteristics of the painting surface for transparent watercolor, such as the tone, texture, quality, weight, and absorbency.
- Show how the surface itself becomes an integral part of the design and coloring in transparent watercolor.
- Show how various effects can be achieved through scraping, blotting, and adding accents when paint is wet, semimoist, or dry.
- Show how washes may be used for underpainting, overpainting, blending, or intermixing.
- Show various methods of stopping out through use of rubber cement, tape, and other means.
- Discuss the importance of using the proper brush. Demonstrate wash brushes, round brushes, flat brushes and the various effects that may be obtained by each.
- With a large brush, show how many effects may be achieved, from broad to fine lines.
- Demonstrate and discuss the specific characteristics of the surfaces best suited for tempera and casein paint. Point out that casein may be used on porous surfaces such as posterboard, cardboard, or paper, but should not be used on tightly sealed surfaces such as canvas board or tempered hardboard, for the paint might crack or peel.
- Demonstrate and discuss various effects and characteristics of tempera and casein paints. Demonstrate the covering power and how either medium may be used thin or thick.
- Discuss the characteristics of the various brushes that may be used, such as stiff bristle brushes or soft hair brushes (sable, squirrel, camel's hair, or ox hair).
- Demonstrate and discuss methods of stretching watercolor paper and the reasons for this procedure.
- Demonstrate the use of the watercolor block and its advantages when painting "on location."
- Stress the importance of proper care of all materials. Point out that brushes left standing in water for any length of time will lose their shape. Emphasize that casein must be washed out of the brush immediately, for once it is dry, it will not wash out.

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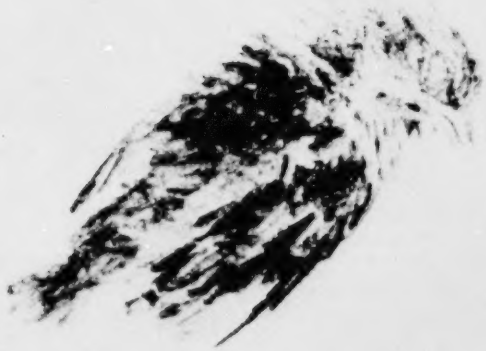

Studio Experiences

The student might

- Experiment with both transparent and opaque watercolors on a variety of surfaces, using different sizes and types of brushes to achieve a variety of strokes and techniques.
- Explore such techniques as the use of washes, dry brush, opaque tones, textured effects, dribbling, sponging, and scraping.
- Using the sketchbook for reference, work out a simple landscape, stressing the wet watercolor medium itself.
- Design a series of abstract paintings, using wet or dry techniques, or a combination of both.
- Paint a still life, and try to simulate the various textures in the objects, such as glass, fabric, and wood.
- Paint a landscape that contains simple figures in action or repose.
- Paint a group of figure studies of a student model dressed in costume or colorful clothing.
- Work out a large design to emphasize a fantasy theme. Combine various techniques demonstrated earlier, such as applying ink and lifting out areas of it with tissue.
- Plan and execute a composition which will combine watercolor, ink, and collage.
- Work out a group of designs in paint using tools other than brushes.
- Select several completed paintings and cut mats for displaying them.

Independent Studio and Research Projects

- Create a painting that expresses a personal view of a current issue.
- Study the effects of daylight on a subject as opposed to the effects of artificial illumination.
- Make a series of quick outdoor sketches which may be used for reference later in the classroom.
- Choose an idea from the sketchbook and work out a painting based on it, using areas of watercolor wash with pen and ink details.
- Work out an abstract composition which might stress a particular emotion or feeling, such as falling, dreaming, love, or insecurity.
- Paint a nonobjective composition using the drip-and-drop technique on wet paper. Add details when the composition is dry.
- Paint several studies of figures in sepia wash tones with line accents.
- Study the works of famous artists, such as the watercolors of John Marin or Winslow Homer, and the temperas of Andrew Wyeth and George Tooker.

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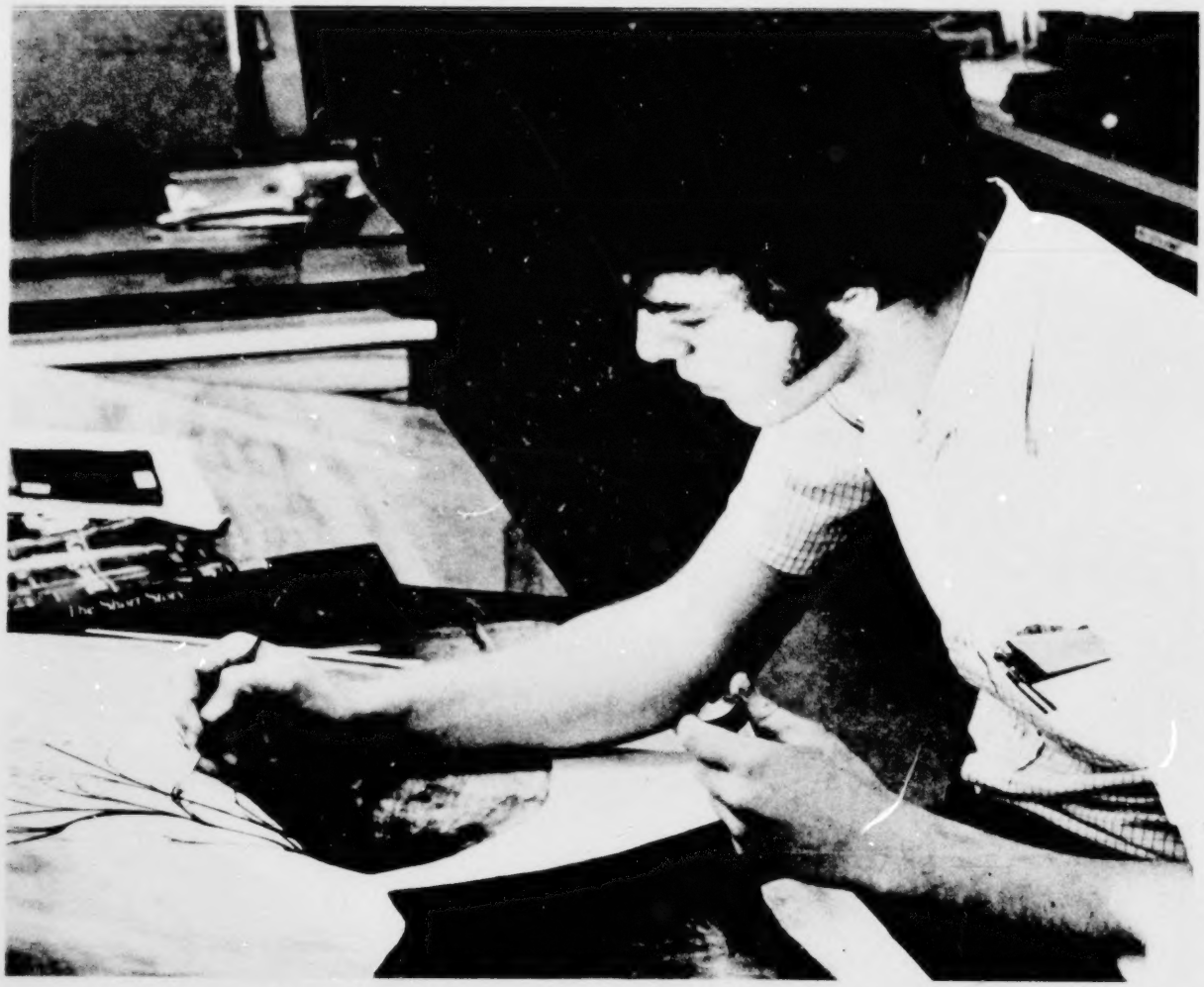


Evaluation

- Has the student explored each of the media presented?
- Does the student understand the characteristics of each of the watercolor media?
- Has the student demonstrated excitement and boldness in the use of these media?
- Does the student demonstrate skill and a personalized approach in his handling and control of these media?
- Is there evidence that the student has used imagination and innovation in his work?
- Has the student attempted to build strong composition while using the watercolor medium?
- Has the student shown appreciation of, and sensitivity to, the unique characteristics of each medium?

Equipment and Supplies for Watercolor Painting

brushes (bristle, camel's hair, ox hair, and sable, in variety of sizes and shapes)
casein paints (tubes; see suggested palette)
cloth
containers for individual student equipment
cotton
drawing boards (18"x 24" or larger)
easels (folding)
inks
muffin tins
palette knives
palettes (china-coated, metal, or plastic)
pens and penholders
portfolios
razor blades
rubber cement
sketchbooks
sponges
tempera (cakes, jars, and tubes; see suggested palette)
tissues
transparent watercolor (sets and tubes, dye cakes; see suggested palette)
water pans
wax crayon
wax pans

Oil Paints

Oil paints are made with organic or mineral powders mixed with linseed or poppy oil as a binder.

Paint emulsions used in past eras dried very rapidly, whereas tube oil paints used in modern times dry much more slowly. Oil paints will remain moist for 2 or 3 days and some will not become completely dry for months. The reason for the extended drying time is the presence of retarders which have been added to the prepared paints.

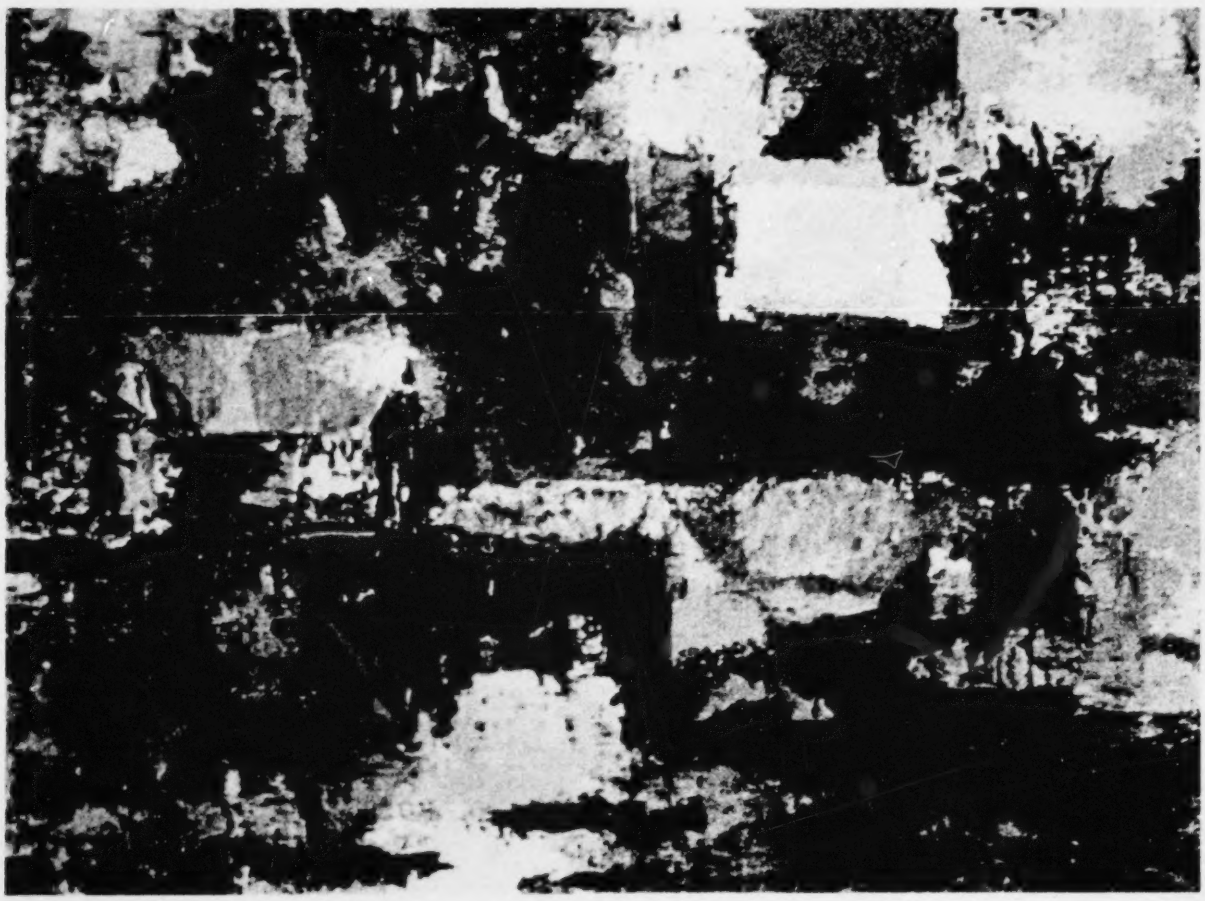
Colors can generally be divided into two groups: the earth colors, such at venetian red, yellow ochre, burnt umber, raw umber, burnt sienna, and raw sienna; and the artificial or mineral colors (semipermanent), such as cadmium yellow, cadmium red, cadmium orange, cobalt, or viridian.

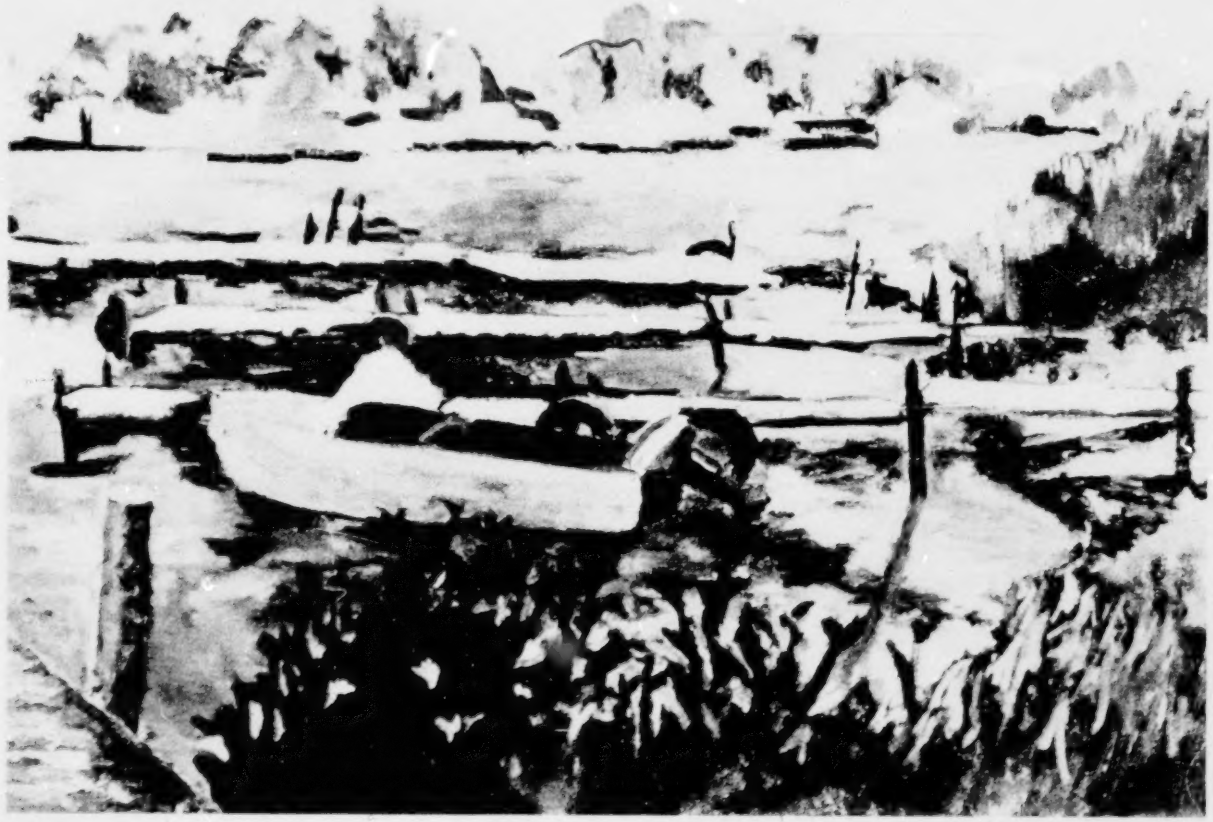
Since white is essential when painting in oil, it is important to know that the common whites are flake white, zinc white, and titanium white. Flake white, a white lead, dries fairly rapidly. Zinc white, derived from zinc, has a tendency to crack and yellow somewhat. Titanium is a good mixer, is slightly stronger, and is judged to be the best by many artists.

DILUTANTS, VARNISHES, DRYERS

- A *dilutant* is a liquid which thins the paint and makes it easier to spread and handle. The preferred dilutant for oil paint is turpentine. Colors may also be thinned with linseed oil, but this tends to retard drying and gives a more glossy appearance to the surface. Stand oil is a good thinner when applying glazes. Generally a good thinner would consist of one part turpentine and one part stand oil.
- *Varnishes* generally consist of solutions of resin in solvents, or cooked oil containing resin, made by cooking resin in oil and thinning with turpentine. Varnishes may be applied with a soft bristle brush or by spraying.

  There are two types of varnishes:
  - *Retouching varnish* is a light varnish and is usually used while the painting is in process. This has the least concentration of resin.
  - *Damar varnish* is used to protect well-dried paintings. It forms a permanent protective finish coat.
- *Dryers* are substances added to the paint to cause it





to dry and harden more rapidly, but these should be used with caution.

Cobalt linoleate drier is the best drier for permanent painting.

TOOLS USED IN OIL PAINTING

- *Brushes* commonly used are made of hog's hair bristle or nylon, and come in a wide variety of shapes and sizes. A soft brush such as sable is often used for detail.
- *Palette knives* are used for mixing and for scraping paint from the palette. Palette and painting knives come in many sizes and shapes and can be effective tools for applying paint.
- *Palette* or *mixing area:* any portable, nonporous surface such as varnished wood, tempered hardboard, or glass may be used for this purpose.

PAINTING SURFACES

- *Canvas* is usually made of linen or cotton stretched over a wooden frame. This material comes in various textures and qualities.
- Many other surfaces can also be used for oil painting if properly primed, such as cardboard, canvas board, heavy paper or canvas paper, hardboard, wood or burlap. It is important that hardboard and cardboard be primed on both sides to reduce warping. Gesso, acrylic gesso, or white lead paint may be used as a primer for these surfaces.

Demonstration and Discussion

- Display all of the basic media and tools used in oil painting.
- Demonstrate the various characteristics of the paints themselves and the mixing of paints.
- Using a diagram, show how a palette is arranged and the importance of always working from a full palette.
- Show the various effects that can be achieved by using the paint as a glaze or as a stain; how thick and thin paints can be used for desired effects; how highlights are achieved.
- Explain and demonstrate how the drying process is affected by the thickness of the paint as well as by various dilutants which have been added.
- Demonstrate and discuss various brush strokes that could be employed in different types of painting, and include the application of paint with the painting knife and other tools.
- Demonstrate the method of starting an oil painting by sketching directly on the demonstration paper with a neutral color thinned with turpentine.

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- Show the preparation of various painting surfaces. Demonstrate how to stretch a canvas, and how to apply ground to other painting surfaces.

THE PALETTE

A palette of oil colors should be methodically arranged for quickness and efficiency in selecting and mixing colors. One accepted way of placing the colors is to arrange them from light to dark, grouped according to value. In this manner the student may systematically use the hue and its corresponding value. A great range of subtleties in any color may be discovered through proper selection and mixing.

There are many methods for keeping oil colors moist for several days, such as placing the palette in an airtight container, placing protective film over the paint, or adding a drop of oil to each color. In time, the student will acquire a feeling for how much of each color to place on the palette.

Students should start with the minimum palette and gradually work up to a more complete range of colors as they gain experience.

Beginning minimum palette

white	alizarin crimson
cadmium yellow light	burnt umber
cadmium red medium	black
permanent green	pthalo blue

Full-range palette

white	raw sienna
lemon yellow	burnt sienna
cadmium yellow light	burnt umber
cadmium yellow medium	raw umber
cadmium orange	ultramarine
cadmium red medium	pthalo blue
cadmium red deep	cerulean blue
vermillion	prussian blue
yellow ochre	cobalt blue
permanent green	mars violet
viridian	alizarin crimson
	black

Sooner or later, a student will want to thin out the pigments for special effects. To thin the pigment and retard drying, try a mixture of two parts linseed oil to one part damar varnish (a general mixing formula). A large amount of pure turpentine with the pigment should be used to make a thin wash solution.

Studio Experiences

The student might

- Prepare a simple palette of color, and on a sheet of inexpensive paper, apply with brush and knife a wide range of small dabs of color which have been mixed on the palette. Experiment with various consistencies

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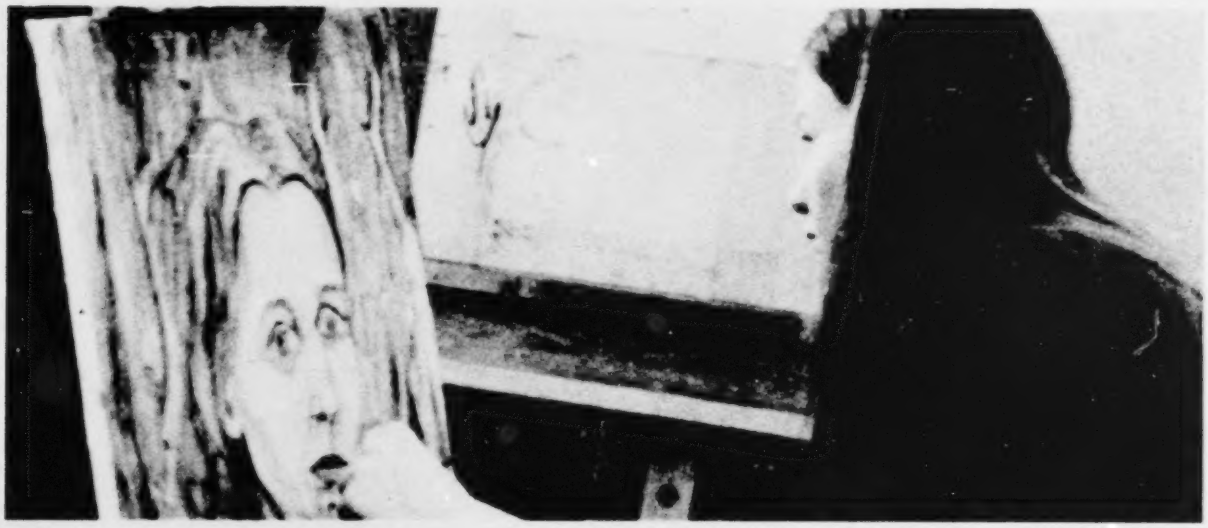
of paint by thinning some samples with oil and others with turpentine.

- Use a variety of brushes and painting knives to explore different methods of applying paint to the surface, such as spreading flat areas, using pointillistic strokes, making various textural effects, and using paint which has been diluted with oil or turpentine.
- Experiment to determine the mixing qualities of the different pigments with respect to changes in hue, value, and intensity.
- Work out a simple design in which flat areas of transparent color are set side by side, slightly overlapping. The overlapping areas should show the transitional tones.
- Work out a simple landscape from the sketchbook, emphasizing a particular mood.
- Develop a composition to be painted in a very high key. Maintain the purity of the various colors as much as possible.
- Select a particular color and develop a painting which will emphasize this hue. Mix a wide variety of subtle colors within the composition.
- Work out a composition that expresses individual feelings about a particular subject. Develop this in colors that best express these feelings.
- Work out a character study of a model or member of the class, using colors which reflect his personality. Emphasize a specific center of interest.
- Study a group of painters such as Kandinsky, Motherwell, Nolde, or Pollock, and work out an expressive painting which was inspired by the works of one of these artists.
- After setting up a still life, stain in the colors of the composition. Complete the painting with a painting knife, and attempt to duplicate the textures of the various objects.

Independent Studio and Research Projects

- Work out a composition that could have been inspired by dreams, fantasies, or nightmares. Observe works by such artists as di Chirico, Chagall, and Dali.
- Work out a painting inspired by the environment. Emphasize a personal approach in developing the forms, lines, and colors for this composition.
- After studying such cubists as Gris, Picasso, Braque, make a series of sketches from a model, emphasizing a particular geometric motif. Develop a painting from these sketches emphasizing flat colors, interlocking planes, and equivocal line and color.
- Develop a painting that expresses line quality. Try to emphasize the repetition of similar lines and colors, while avoiding monotony.
- From a group of animal sketches, develop a painting in which special effects are created by scratching through the paint while it is still moist.
- Develop an expressive self-portrait.
- Work out a landscape painting which will stress some aspect of the weather, such as rain, mist, snow, fog, or brilliant sun.
- Develop a composition in which various areas will be built up thickly to emphasize textural relationships.
- After studying the use of underpainting and glazes by such artists as El Greco or Jack Levine, use this technique in developing a portrait of a friend.
- Using various materials such as fabric, wood, paper, or cardboard which will be attached to a rigid surface, develop a composition in which these objects are combined with oil paint to create textured effects.
- After studying works of Albers, Mondrian, Indiana, and Kelly, design a hard-edge painting which will stress the effect of motion through the position of contrasting colors and values.



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Evaluation

- Does the student understand the characteristics of oil as a medium?
- Has the student shown an awareness of the range of the oil pigments and how they are used as a vehicle of personal expression?
- Has he demonstrated skill in handling the tools and materials essential to this medium?
- Has he developed a sense of independence in his work, including experimentation, innovation, and exploration of new uses and approaches to the oil medium?
- Does he demonstrate confidence and strength in his use of this medium as a means of expression?
- Has he learned to appreciate the range of skills, techniques, and styles which have been demonstrated in painting of the past?
- Is the student sensitive to the new approaches in the use of oil paint?

Equipment and Supplies for Oil Painting

atomizer
brushes (sable, bristle; in various sizes and shapes)
burlap
camp stools
canvas boards, canvas paper, oak tag
canvas (linen or cotton)
charcoal
glass jars
easels (good quality); folding easels for outdoors
fixative
hardboard
linseed oil
oil paints in tubes (white: 1 lb. size; color: 3" tubes or larger; see suggested palette for colors.)
palette (wood, masonite, glass; 10" x 14" minimum)
palette knife (various sizes)
staple gun, tack hammer
stretching frames and pegs
paint thinner
turpentine
varnish (damar, retouch)
stand oil
stretching pliers

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Acrylic Paints

Acrylic paints are one of the most interesting developments in painting of this century. These synthetic paints generally consist of acrylic polymer emulsion. They may be thinned with water, but dry to a durable, permanent, plastic resin finish. They are available in jars, metal or plastic tubes, and in dry cakes. Because of the rapidity of the drying process, overpainting may be done without delay. Many of the problems inherent in oil painting are eliminated, such as slow drying, offensive odors, fire hazard, and time-consuming cleaning of palettes, brushes, and hands. The problem of storing in-progress paintings is also greatly alleviated, because of the rapid drying time. In general, acrylic polymer emulsion paints especially lend themselves to use by school students.

Other properties of acrylics are as follows:

- They are water-resistant when dry
- Overpainting is not hindered by colors bleeding through
- They may be built up quickly to great thickness
- They are generally unaffected by light
- They will adhere to a wide variety of surfaces
- They are ideal for combine or collage paintings
- They may be used as an underpainting for oil
- They permit a great variety of effects, such as brush textures, knife impasto, brilliant glazes, flat gouache, tempera effects, transparent watercolor effects, and washes
- A retarder may be added to slow drying time.

Many other art activities may utilize this medium, such as silk screening, monoprinting, modeling, papier maché, and collage. Because of the adhering qualities of acrylics, many other materials may be incorporated in the composition, such as sand, paper, clay, wood, and fabric.

Although many feel that this paint is like oil or watercolor, there are many differences. Acrylic polymer emulsion colors are brilliant and do not fade when thinned. The quality and range of colors are unique. The textural dry quality is another feature. Many other characteristics will become evident to the student as he explores this medium further.

PAINTING SURFACES

A unique property of the acrylic polymer emulsion paint is the ability to adhere to almost any surface, includ-

ing canvas, hardboard, paper, plaster, and masonry. The only surface not to be used is one that is oily.

In high school classes, good quality paper or cardboard is more satisfactory than the more expensive canvas or hardboard.

BRUSHES

Acrylics are more destructive to brushes than oils or watercolors are. Standard bristle brushes (which will lose their shape in time), sable brushes, or camel's hair brushes may be used for this medium, although nylon brushes will generally last longer than others. Brushes must be wet before using and must be kept moist during use. Immediately after use, all brushes should be washed with a soap solution and rinsed. If a bristle or soft brush is used, it should be pressed flat while drying so that it will not lose its shape.

DILUTANTS AND EMULSIONS

- *Matte medium* mixed with acrylic paints will retain a completely dull or flat finish. It may be mixed with the gloss medium to control the amount of gloss.
- *Matte varnish* is a nonglaring final varnish that brings out the richness of the color.
- *Gloss medium* can be used as a glazing medium, a final varnish, or it may be added to the paint.
- *Acrylic gesso* is a brilliant white ground for any type of painting surface. This ground may also be used for oil, tempera, or casein paint.
- *Modeling paste* contains marble dust and produces a three-dimensional effect when mixed with acrylic paint, or when used alone and painted over. It may also be carved or sanded when dry.
- *Gel medium* is clear and is mixed with paints to add body, increase transparency, or reduce drying time.

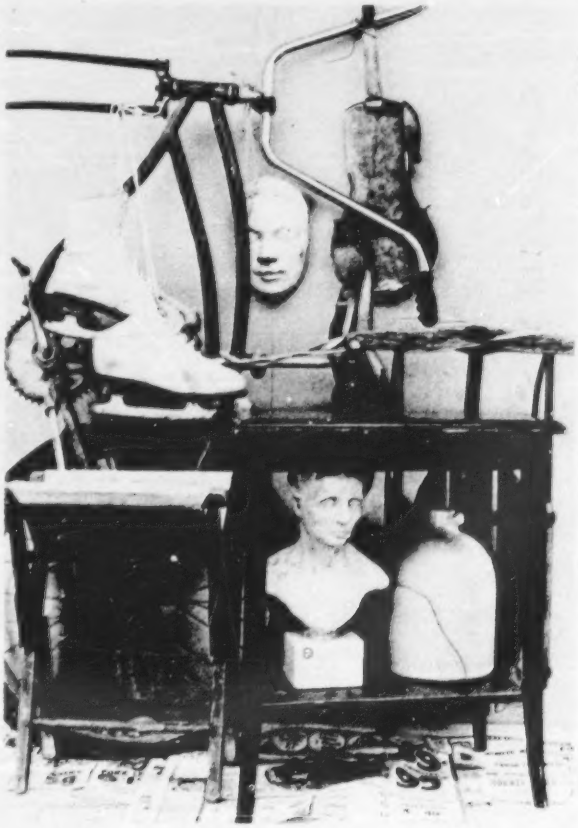
Demonstration and Discussion

- Discuss the unique characteristics of the acrylic polymer emulsion paints. Give a brief technical description of the properties of this type of paint.
- Demonstrate what these paints will do by themselves and when mixed with each of the other painting media. Show the range from transparent watercolor or glazing effect to heavy impasto.
- Discuss the importance of caring for the painting materials. Give specific directions for the care of brushes.
- Show that practically any tool may be used to apply the paint, such as the palette knife, painting knives, wood sticks, cardboard, and sponges.
- Demonstrate the many media for thinning and changing consistency, such as matte medium, gloss medium, gel, modeling paste, gesso, and matte varnish.
- Demonstrate the use of the various modifying media (matte medium, etc.) with materials such as those used in collage, as well as their use in creating different textural effects.
- Show how modeling paste may be used to hold together the parts of an assemblage and a construction.
- Demonstrate the wide variety of surfaces that may be used. Show how gesso is applied for a painting ground.

Studio Experiences

The student might

- Work out a nonobjective design using flat areas of color on large paper or illustration board. Emphasize the wide variety of textural qualities which acrylic paint offers.
- Work out a large design on watercolor paper or illustration board which will show the wide range of transparent tones and glazes that can be achieved.
- On a large piece of heavy illustration board, cardboard, binder's board, or hardboard, develop a design using modeling paste and matte medium. Mix the two together and push, scrape, guide, and draw in the material while it is still moist, and attach various small objects where appropriate in the design. After all areas are thoroughly dry, the modeling paste may be carved with a knife to create additional de-



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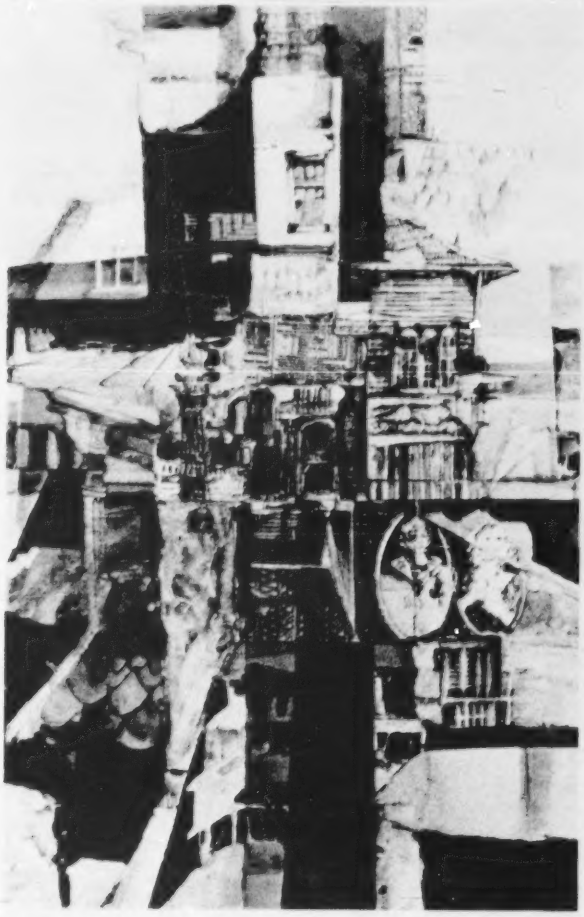
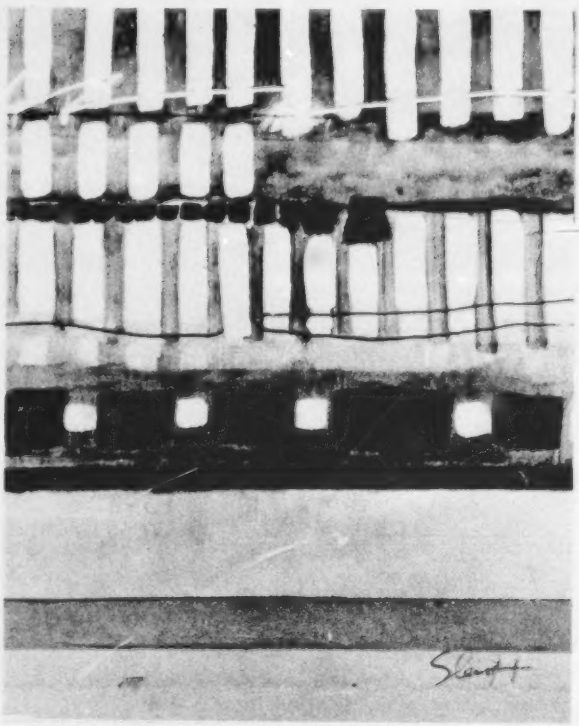


tail. Color may be added when the design is completed.

- Use matte medium as an adhesive to make a collage from such materials as tissue, newspaper, and fabric. Working from a preliminary sketch, lay out the materials on the surface to be used, and rearrange them until the desired design is achieved. Adhere the materials and add various pieces and colors as needed to strengthen the composition.
- Paint a landscape directly from nature. Overlap transparent shapes, and emphasize the brilliant qualities of the paint.
- From a posed model, make several quick sketches directly with acrylic paint. Emphasize general characteristics of the model and the pose while avoiding detail.
- From a sketchbook or direct observation, develop a composition with a city theme. Emphasize spatial qualities and light and dark patterns. Try using hard-edged tools such as painting knives or cardboard.
- Using several studies of figures in action for reference, design a composition containing groups of people or a crowd.

Independent Studio and Research Projects

- Develop a mural with an appropriate theme. Make a series of working drawings which include specific details. Do the necessary research and consult with the teacher throughout the entire project. Make a scale drawing of the design, including the color scheme. This problem may be worked out by an individual or by several students together.
- After completing the necessary research, write a paper describing the development of acrylics as a painting medium.
- Using modeling paste, work out a relief design based on a particular idea concerning the human figure. Finish with a staining technique, using color plus medium.
- Work out a series of experimental paintings to discover the full potential of this medium. Report to the class the findings as to what acrylics will and will not do.
- After studying the works of an artist in recent history, develop a composition inspired by his subject matter, color, technique, or style.
- Using a limited palette, design a painting which will show the artist as a propagandist, or art as a means of social comment.
- Work out a fantasy using a drip technique plus a wet-on-wet technique in which liquid color is applied to a wet or damp surface. Add desired details when the initial application has dried.



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Evaluation

- Does the student recognize the distinctive qualities of the acrylic polymer paints?
- Has he the ability to use acrylics in each of the many ways demonstrated?
- Has he demonstrated innovative ways of expressing himself with this medium?
- Does the student's work show a fresh and exciting quality?
- Has he shown interest in, and appreciation of, the uses of this medium, and has he shown interest in continuing experimentation and study on an independent basis?

Equipment for Painting with Acrylics

acrylic polymer emulsion colors (tube, jar, cake):

Beginner's palette
- burnt umber
- cadmium red medium
- cadmium yellow light
- mars black
- phthalo green
- raw sienna
- titanium white
- ultramarine

Additional colors
- burnt sienna
- cadmium orange
- cerulean blue
- crimson
- Hooker's green
- phthalo blue
- raw umber

dilutants and emulsions:
- acrylic gesso
- gel medium
- gloss medium
- gloss varnish
- matte medium
- matte varnish
- modeling paste

brushes (bristle, camel's hair, sable, nylon) in assorted sizes and shapes

jars (glass or plastic)

easels

materials for collage (fabric, paper, wood)

painting surfaces:
- canvas and stretchers
- canvas board
- canvas paper
- cardboard
- hardboard
- paper

palette knives

palettes (glass, paper, varnished wood, hardboard, others)

paper towels, cloths, sponges

sketch pads

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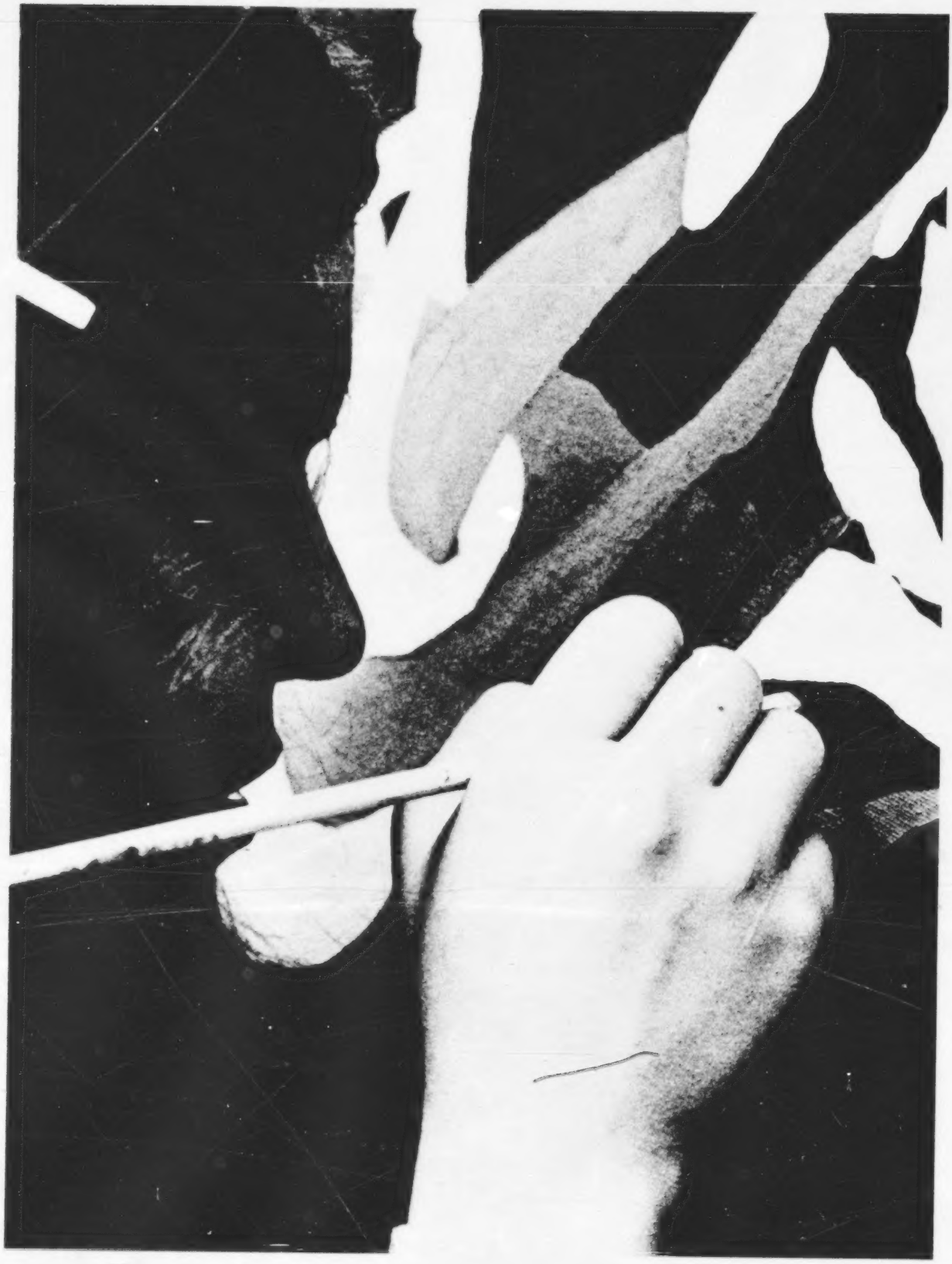

Glossary of Terms

acrylic a polymer emulsion with a fast drying property.
alla prima painting without underpainting.
binder any one of the glues or materials used to make paint adhere.
canvas prepared cloth, usually linen or cotton duck, used to paint on.
casein milk-based binder used in many paints; usually called casein paint.
chemical color pigment derived from chemical sources such as the analine colors from coal tar and alizarin crimson from dihydroxyanthraquinone, precipitated on a base of aluminum hydrate.
chiaroscuro treatment of light and dark in a painting or drawing.
cobalt linoleate drier drying agent made by cooking salts in linseed oil.
damar varnish a resin varnish.
earth color pigment derived from earth, chiefly clay (yellow and red ochre, virdian, bone, lamp black, etc.).
egg tempera paint with egg yolk as a binder with dry color. Traditionally used on gesso panel.
encaustic wax binder with dry color, used by the ancients.
fixatives transparent spray used to fix media such as charcoal and pastels.
fresco painting with lime water and dry color on fresh plaster.
gesso white pigment with binder.
glaze a darker transparent color film applied to a lighter underpainting.
glaze media traditionally 2 parts stand oil, 1 part damar varnish, 2 to 5 parts turpentine.
gloss shiny surface finish.
gouache opaque watercolor.
ground material applied to a surface to prepare it for paint.
hiding power the degree of opacity in the paint.
impasto a thick, textured application of paint.
linseed oil oil of the flaxseed, usually used in oil painting.
mat, matt, or matte dull surface.
medium the material used to create an art object. Also the liquid with which pigments are mixed to make them suitable for painting.
oil paint pigment mixed with oil.
organic color pigment derived chiefly from animal or vegetable sources.
palette surface of paper, wood, metal, or glass, upon which paint is mixed.
palette knife a dull, knifelike tool with which paint is mixed or applied.
pigment pure color used in making paint.
priming preparation of a surface (same as ground).
quick-drying white paint developed for underpainting.
resin any of the exudates of certain pine trees.
scumble a semitransparent application of light paint to a darker underpainting.
sizing a gluelike material used to make the surface to be painted impervious to oil, water, etc. Helps to protect the surface from damage such as rot.
solvent material which will cut through media such as turpentine or oil. Usually used in cleaning up.
stand oil nonyellowing linseed oil.
texture structure of a surface (smooth, rough, granular, etc.).
tooth roughness or graininess of surface.
underpainting usually the first covering of a surface in the making of a painting.
value a color's degree of lightness or darkness.
varnish a solution of resin in a dilutant.

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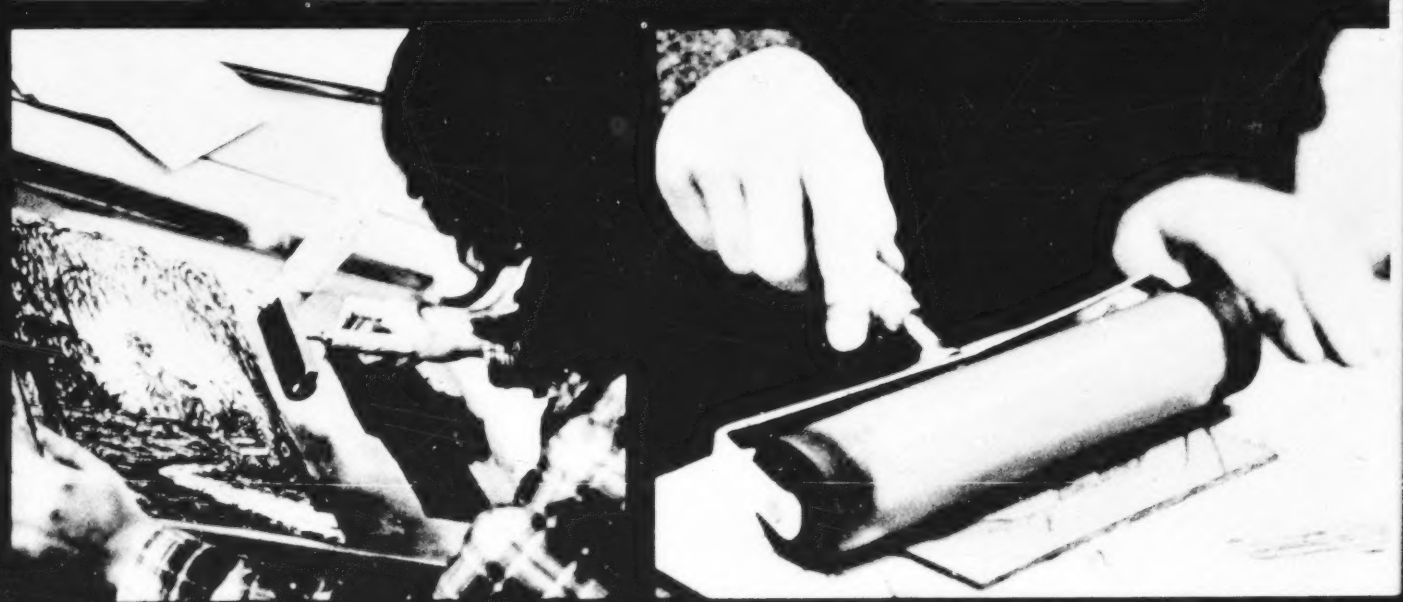

STUDIO IN GRAPHIC ARTS (printmaking)

COURSE DESCRIPTION

This course is designed for students who have completed a full year of *Studio in Art* and desire to take advanced work in the area of printmaking. In this publication, printmaking is concerned with the art of using lines, solid masses, tones, and textures in such a manner that many proofs may be produced or pulled from an original. The course covers a variety of processes and materials for exploration. Since it would be impossible for the student to work in depth in all of the various areas of study introduced in this publication, it is suggested that the teacher introduce all processes early in the course, but the student select his own special processes to pursue and master.

Students should keep a notebook of classwork and research, and a portfolio containing sketches, photographs, and examples of the various forms of printmaking.

STUDENT OBJECTIVES

Upon satisfactory completion of unique segments of this course of study, a student should be able to demonstrate:

- Increased ability to express ideas logically, clearly, and esthetically through the medium of printmaking
- Independent judgment based on knowledge of printing and processes, and the ability to substantiate the conclusions reached
- Increased understanding of the elements and principles of art structure and be able to apply them to printmaking processes with esthetic sensitivity
- Printmaking techniques of an esthetic nature
- Proficiency in the handling of tools and materials
- A personal approach to problems
- The understanding that printmaking demands artistry, skill, and the disciplines of persistence, organization, self-reliance, concentration, good work habits, and a respectful attitude toward materials

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INTRODUCTION TO PRINTMAKING

The traditional concept of the graphic arts includes all forms of two-dimensional visual expression: drawing, painting, printmaking, and photography. However, this course includes only the processes of printmaking and offers a few suggestions concerning the area of photography. See also the elective course *Studio in Photography*.

A recent revival of interest in the area of graphic arts grew out of the realization that printmaking is a highly expressive medium. The trend is in creating unique textural effects, superimposing shapes with transparent inks, and using off-register effects to give the feeling of overlapping forms, possibly stemming from the ideas expressed in Dadaism, Futurism, and Cubism. Contemporary printmakers are now producing prints equal in artistic merit to painting and deserving recognition as a fine expressive medium worthy of a definite place in the museums and galleries of art.

Another recent trend in printmaking has been the relief print, using the hydraulic press. Many contemporary artists are creating embossed white-on-white prints, using found objects glued to a hard board to make a three-dimensional print.

Whether materials are plentiful or limited, printmaking has merit only if students have learned the importance of good craftsmanship, and a respect and care for tools, materials, and equipment. Careful planning will maintain a balance between freedom of expression and disciplined craftsmanship.

Printmaking might be divided into two classifications:

(1) *Printing by transferring images from a surface coated with paint or charged with ink or some similar media, onto another surface. The character of the surface has much to do with determining the process.*

- The *planographic*, or surface printing process, is done from a flat plate; the design neither raised nor lowered.

  The *monoprint* is a simple planographic process involving the following methods: additive, subtractive, overlay, cylinder printing, mixed media, or a combination of any of the above. This type of printing is often done on glass, metal, or other slick surfaces with oil- or water-based paint or ink, and is then transferred by contact to paper. Usually only one print is made from each design.

  Lithography is based on the fact that grease repels water. In this process the artist uses a wax crayon, lithograph pencil, or wax-based paint to draw or letter on the surface of a slab of limestone or on aluminum. The surface is sensitized, kept moist, inked, then printed.

- The *relief* process requires raised surfaces to receive the ink so that the image can be reproduced on another surface. Wood and linoleum blocks are the most common materials used in this process.

  The *intaglio* process includes both etching and engraving. Both depend upon indentations in metal or celluloid to hold the ink, which will transfer an image onto paper under pressure. In etching, indentations are made through the use of acid. Engraving refers to carving or inscribing marks into metal, wood, or celluloid with a sharp or pointed instrument.

  The *collagraph* is a contemporary intaglio printmaking process in which prints are pulled from a *relief block* — a block in which patterns are built up in the manner of a *collage*. The surface is inked, then wiped to leave ink only in the depressions, then printed in an etching press.

(2) *Printing by reproducing an image through a negative area. The type of aperture determines the printing process.*

- *Serigraphy* is a process whereby a fine mesh, usually of silk or organdy, is tightly stretched over a wooden frame. The areas to be printed are left open, and the nonprinting areas are stopped out with a coat of lacquer, shellac, glue, paper, or a commercially prepared film. Print is then squeezed through the open mesh onto the surface of paper, poster board, fabric, or other material.
- *Photography* employs a negative film placed over light-sensitive paper. Light passes through the transparent areas and is stopped by the opaque areas. Hence, that which is negative becomes positive. The sensitized and exposed paper, glass, plastic, or fabric is developed and fixed by means of chemical solutions, then dried.

General Discussion

After showing various examples of the printmaking processes mentioned above, discuss such topics as:

- The unique advantages printmaking offers
- The printing surfaces of the relief, intaglio, and lithographic processes
  - How are they different and how are they the same?
  - Which method is more direct in recording ideas and feelings?
  - Which method is more closely related to offset printing?
  - How is lithography done in color?
  - What are some common forms of lithography that we see every day?
- The theory behind lithography
- Why a monoprint is considered a printing process
- How the monoprint method of printing differs from the lithographic process
- The primary differences between engraving and etching
- How color is employed in woodcut, linoleum block, intaglio, and silk screen prints
- How scrap material can be used in various printing processes
- How relief printing is used in modern printing processes
- Presentation of a print (proper matting, signing, numbering, dating)

Monoprint

The monoprint, a process that produces one impression only, is an approach which links painting and printmaking. The method involves creating a painting or design on the surface of a piece of glass (or any polished surface), and then transferring the image onto paper. A monoprint can be made by adding or building up pigment on a slick surface, or by removing areas of the pigment already applied to the surface. This technique offers many possibilities for exploration.

One of the first to experiment with the monoprint process was Giovanni Benedetto Castiglione (17th century). He experimented with three methods: (1) painting on a metal plate and printing it, (2) covering a metal plate with paint and scratching out an image with a pointed stick or tool, (3) combining the two methods.

Interest in the monoprint spread to France, and about 1890 Lautrec, Corot, Degas, Renoir, Gauguin, and others explored its possibilities. Degas and Gauguin were the most outstanding in that they realized its potential as an expressive medium and seriously exploited the process.

With the new freedom from academic purism and a keen interest in materials and processes, painters such as Matisse, Klee, Picasso, Dubuffet, and Rouault also began working in this medium.

In 1914, Matisse made a series of monoprints resembling wood engravings, and Jean Dubuffet tried the technique of pasting monoprint-derived cutout shapes together to create striking abstract shapes.

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Studio Experiences

The student might

- Ink a brayer with printer's ink and roll it on drawing paper, using different kinds of strokes and directions.
- Try variations of the above, such as winding the roller with string or yarn, or scraping and scratching the printed surface with various tools.
- Paint a nonobjective pattern on a glass or polished metal surface, using oil paint, and print by placing either wet or dry paper over the painted surface and rolling it with a clean brayer.
- Print from two or more plates, combining different colors and providing effects of overlapping and overlaying.
- Experiment with several kinds of brayer prints, using found materials such as string, fabric, plastics, and rubber matting for textural effects.
- Explore the use of various types and colors of paper, both moist and dry, for monoprinting.
- Make a brayer print on a long piece of glass using oil-based printer's ink. Use the additive and the subtractive method of brayer printing.
- Create a composition on cardboard using glue, and allow to dry. Secure an image by rubbing with the hand or a spoon, and pull the print.

Independent Studio Projects

- Experiment further in monoprinting, using a personal approach toward the expression and the process.
- Create a design using still life or animals as subject matter, and attempt to get sharp value contrasts, unique textural effects, and interesting color harmony.
- Create a monoprint that conveys a mood such as rainy night, haunted house, or alone.

Evaluation

- Does the student understand that monoprinting is a method of reproducing one image by applying paint or ink to a surface (usually a glass surface), then transferring the image onto paper?
- Has the student considered the unique qualities of the monoprint so that these characteristics have become a part of his own compositions?
- Has the student explored the wide variety of monoprinting processes?

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Relief Printing

Relief printing is a process in which the design to be printed is cut or modeled in relief or built up from a flat surface with various materials such as cardboard, wood, or glue.

Relief printing is considered the oldest of the graphic processes, dating from the ancient Egyptians and the T'ang Dynasty (A.D. 618–907) in China, in the form of the woodcut.

After the invention of movable type by Gutenberg in 1436, books made their debut and woodcuts and wood engravings became the standard means of illustration.

Albrecht Dürer was one of the first artists to use the woodcut to reproduce his drawings. Hans Holbein also designed for the woodblock and worked with one of the foremost masters of the medium, Hans Lützelberger.

Thomas Bewick, who was influenced by Croxall's woodcuts of illustrations of Aesop's fables, was the first artist to give the white line wood engraving popularity and distinction. William Blake also used the white line method. Although his engravings were not technically skillful, they had a plastic quality and exploited the inherent quality of the medium. Blake is considered a pioneer of the technique used by many contemporary artists.

During the 19th century, woodcuts were used to illustrate newspapers, magazines, and books. The Japanese also excelled in woodcut printing, which is probably one of the most popular printmaking processes for high school use. In relief printing little is left to chance, and every cut is a result of a definite decision.

Linoleum Block Printing

The linoleum block process is an excellent introduction to relief printing, in that it involves the basic cutting tools, materials, and printing processes.

The student must learn to create in terms of negative and positive areas while cutting the block. After he has worked with a linoleum block, he will be better prepared to go on to woodblock printing. Unmounted battleship linoleum is fairly inexpensive for class use and is comparatively easy to cut.

Demonstrate and discuss —

- The proper use of these tools and the process of relief cutting
- Several variations of cutting which produce pattern and texture in relief
- The proper sharpening and care of tools
- The types of nibs and gauges used, and the resistance of the material to the tool
- The body weight method of making a print on fabric, using a piece of wet scrap such as old sheeting
- The use of register marks on the back of the linoleum and on the fabric
- Making a collage print, using found materials such as rope, string, rubber tile, cardboard scraps, and fabrics mounted on a piece of cardboard
- How to print two colors using the off-register method
- The method of color printing using two or three colors on a single plate

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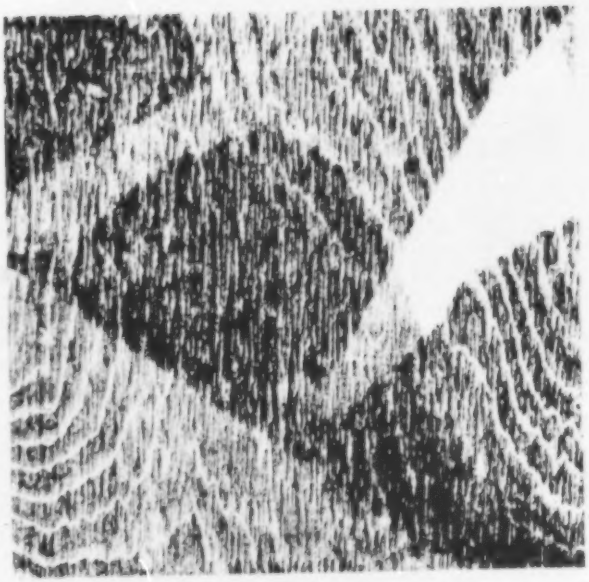
Woodblock Printing

The woodblock lends itself to a greater variety of textures, line gradations, and tonal gradations, and requires a higher degree of discipline than does the linoleum block. Woodblock printing can be a challenging process, in that the student is constantly making decisions as he chips or cuts with or across the grain.

In woodcutting, the student must recognize that the grain of the wood is an inherent part of the complete process and plays an important role in establishing the design or idea. Cherry is an ideal wood for blocks since the grain pattern is inclined to add character to the print, but pine and fir are easier to cut and less expensive. Seeing the grain pattern permits preliminary planning and an opportunity to incorporate it into the design. Inking the surface and making a print of it helps to show the grain. The grain can add textural effects and movement, and if used imaginatively, the grain pattern can suggest a theme or a design.



Demonstrate —

- Sketching an idea for a print, using a bold drawing instrument such as a felt-tip pen or crayon
- Using a soft pencil, tracing the design onto onionskin, and including areas of the grain as a register to place it on the block properly
- Adjusting the register and transferring the design onto the woodblock by burnishing the back with a spoon
- Using the knife, gouges, and chisels in cutting the block
- Printing the woodblock, using the burnishing method and body pressure method
- Using a wire brush to remove the soft grain and bring out the texture of the wood
- Applying several colors to one block, with each color in a particular location on the block

Discuss —

- The characteristics of various woods and how these should be incorporated into the design
- Examples of woodcuts by Albrecht Dürer, Leonard Baskin, Hans Holbein, as well as Japanese woodcuts
- The process of printing with a reduction block

Wood Engraving

The wood engraving differs from a woodcut in that the end grain of hard, fine-grained wood is incised with sharp tools called burins and gravers. The manipulative skill required for cutting the block is the result of long hours of practice, and requires great control. This is a selective or highly specialized form of printmaking which is not often attempted at the high school level, but might be explored as an independent study.

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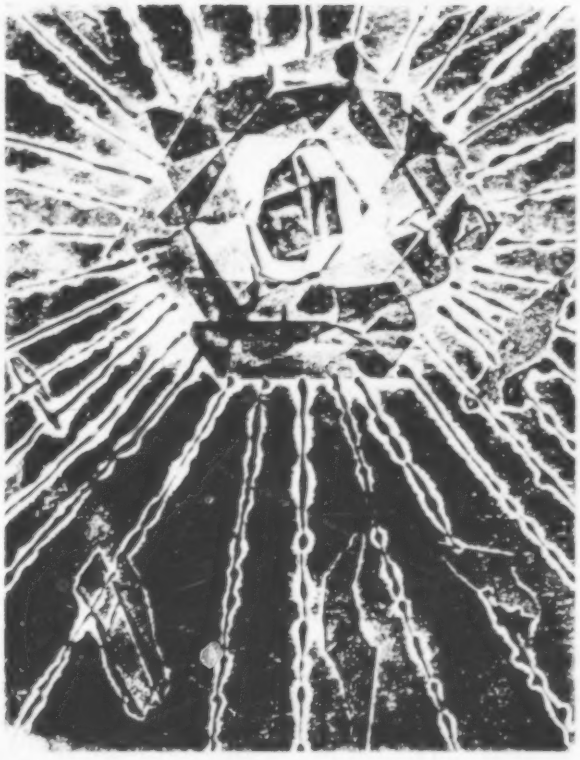

Related Media

There are many ways to approach relief printing without using the traditional media. Creative results need not depend upon materials and facilities but rather upon ingenuity, resourcefulness, and sensitivity. Other materials can be used to give the student an opportunity to explore the relief process. A block of hardened plaster can be used for a plate, and areas can be removed with ceramic tools. Inner tubing or asphalt tile may be cut into shapes and glued to a firm surface in a relief pattern. Scrap materials such as cloth, cork, plastics, rubber matting, screening, and string may also be used.

Studio Experiences

The student might

- Use brush and ink or a felt-tip pen to make a simple direct drawing of a scene outside the classroom window or a scene from memory to be transferred to a piece of linoleum and cut. Attention should be paid to contrasting values or patterns, as well as to the characteristics of the material being used.
- Design a cover for a notebook using a linoleum block print on burlap or other textured material.
- Using pieces of wood about 12" x 6", make several prints of the uncut surface to show texture and grain pattern. Study the prints and try to incorporate the design of the grain into the composition. Transfer the design to woodblock and cut, making several trial prints to observe the progress of the cutting. In printing the final and finished cut, experiment with different types of paper.

Independent Studio and Research Projects

- Using scraps of construction paper, design a motif for a linoleum block print to be used as an overall pattern for a textile design.
- More advanced students might be encouraged to attempt a simple wood engraving.
- Create a composition of overlapping shapes, spatial movements, and decorative quality for a three-color woodblock print.
- Work out a character study of a friend, to be reproduced as either a linoleum or a woodblock cut.
- Using an old house or building in the community as a point of departure, work out several sketches to be developed as a woodcut. When cutting the block, exaggerate the detail and ornamentation found in the subject.
- Develop a sketch of one or several figures, emphasizing a lyrical line quality. Transfer the sketch to linoleum or woodblock and cut only the line areas so that they will remain the color of the background paper or material.
- Prepare a visual presentation concerning relief printing, emphasizing the famous artists noted for their work in this medium.
- Prepare a paper on the development and use of the woodblock print.

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Evaluation

- Has the student incorporated his knowledge of design, as well as the characteristics of the medium, into his work?
- Does the student realize the limitations and potentialities of the materials he has used?
- Has the student gained the necessary skills required to produce a relief print?

Intaglio Printing

In the intaglio process of printing, the image comes from ink-filled incised lines, furrows, or depressions in the plate, which under considerable pressure deposit the ink on the paper. Two distinct techniques are involved in the intaglio process: engraving on metal or other material, and etching on metal. Engraving is considered one of the most highly skilled methods of the graphic arts, and its technique can only be mastered through slow, deliberate, and diligent practice. Engraving differs from etching in that in the former, depressions in the metal are made with tools instead of by the action of acid eating away the metal. In line engraving, the artist uses a burin (or an etcher's needle, if engraving on plastic); in mezzotint he uses rockers and scrapers; in drypoint (a variation of etching), he uses scribers or needles.

Although there are many methods of intaglio printing, such prints are usually referred to as either engravings or etchings. Engravings may be done on copper, steel, aluminum, plastic, or lucite; etchings are made on copper, steel, or zinc. Although the appearance and general effect of both the drypoint print and the etched line print have much in common, their methods vary considerably.

The art of etching with acid appeared north of the Alps in the 16th century. Prior to this, however, goldsmiths had used burins to engrave decorations on their wares. The appearance of etching apparently started when knights demanded elaborate ornamentation for their armor and swords. Goldsmiths, looking for a way to incise the armor, found that the corrosive action of acid met their needs. To observe their work in progress, they rubbed black ink into the bitten lines and discovered that they could preserve records of these embellishments by pressing the inked metal against a sheet of damp paper.

Through the influence of the great master, Albrecht Dürer, intaglio printing spread from Nüremberg, Germany and Northern Italy to the Netherlands.

Intaglio reached its highest development in the Netherlands under the influence of such painter-etchers as Rembrandt and Van Dyck. The former has often been referred to as the father of etching. Perhaps the most widely known etchings of all time are Rembrandt's *Three Trees*, *Ecce Homo*, and *The Three Crosses*.

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One of the greatest etchers of the 18th century was Francisco de Goya in Saragossa, Spain. His *Coprechos*, *Proverbias*, and *Horrors of War* are masterpieces, preserving some of the historic episodes of the times.

During the second half of the 19th century, a revival took place that carried the process to new esthetic heights. Responsible for this revival was James McNeill Whistler, an American-born artist living in England. Whistler's brother-in-law, Sir Francis Seymour Haden, was also responsible for this revival. The impetus these two men gave to intaglio printing continued into the 20th century and is still strong today.

The contemporary trend is toward an experimental approach. Etchers and engravers are constantly exploring new methods and unique ways of expressing the visual idea through intaglio.

Prior to the mid-19th century, the function of printmaking was documentary — a way of recording an event or reproducing a work of art. Artists now use the printmaking process as a means to express original ideas — not always by one method, but often in combinations.

Line Etching

Etching classes should be small (15 students or less). Safety procedures for the use of acid and the press must be stressed.

Demonstrate and discuss —

- Cleaning and beveling the plate
- Spreading the etching ground
- Smoking the plate
- Transferring the image from the drawing to the ground, or copying the preliminary sketch directly on the plate. (Spontaneous, direct etching without a previous sketch may also be done.)
- Using the etching needle
- Cross-hatching and other tonal effects
- Varnishing the back and edges of the plate
- Immersing the plate in the mordant
- Repeating immersions, using stop-out varnish where needed
- Cleaning the surfaces
- Applying the ink
- Using the press and felt blankets
- Pulling a proof and cleaning the plate

Soft Ground Etching

Demonstrate and discuss —

- Cleaning and beveling the plate
- Preparing the soft ground (half hard-ball ground and half tallow, melted together)
- Applying the ground
- Placing sheet of soft, thin paper over the ground. (The sketch may be made on the paper previously.)
- Drawing the sketch on the paper or tracing a sketch previously drawn, using a hard pencil for fine lines and a soft pencil for broad lines; using a plywood bridge for an arm rest
- Using a suitable pressure to cause the ground to adhere to the paper
- Peeling the paper off, starting at narrow end
- Varnishing the back and edges of the plate
- Immersing plate in mordant
- Inking, printing, and cleaning

Aquatint

Demonstrate and discuss —

- Cleaning and beveling the plate
- Applying and heating the resin ground
- Tracing the design on the ground
- Applying the stop-out varnish for highlights
- Immersing in mordant
- Rinsing and applying stop-out varnish on light-valued areas
- Repeating immersion
- Applying ink and printing

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Drypoint Engraving on Plastic

Demonstrate and discuss —

- Holding the scriber in a nearly vertical position
- Tracing a line drawing on a clear sheet of plastic, plexiglass, or acetate made especially for engraving, or glue a reverse of the drawing to the back of the plate
- Relation of line depth to the blackness of the printed line
- Checking the results by inserting white paper under the plastic to make the cuts visible
- Applying etcher's ink to the finished plate with a dauber, using a dabbing or rocking motion to press ink into the line
- Removing excess ink by wiping the plate with a cheesecloth pad
- Pulling a proof on damp paper placed on the plate and rubbed with the hand or back of a spoon
- Making prints on an etching press

Drypoint Engraving on Metal

Demonstrate and discuss —

- Polishing a plate of copper, zinc, or aluminum
- Drawing the image on the plate with a soft pencil such as a lithograph pencil
- Using a sharp pointed drypoint needle to go over the lines with firm, sure strokes
- Varying the line quality and tonal effects by varying the pressure, angle of the needle, and spacing of the lines
- Checking the progress by rubbing a small amount of printing ink into the lines
- Removing burrs where a lighter line is desired
- Cleaning the plate without removing the burrs
- Checking the pressure of the press to avoid a heavy pressure that might destroy the burrs
- Applying ink with a dauber
- Printing

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Mezzotint

Because of the intricacy of the mezzotint process, it might be best to only discuss and demonstrate it so that students will be acquainted with it, although lacking actual practice.

Studio Experiences

The student might

- Create a continuous contour drawing of a still life to be reproduced as either an etching or an engraving.
- Make several still life sketches in various styles. Select one and reproduce it by engraving or etching.
- Draw an object in several positions. Create an illusion of form and depth through the use of lines. Reproduce in line engraving.
- Work out several sketches based upon forms or patterns in nature, and develop them in one of the techniques demonstrated.

Independent Studio and Research Projects

- With chalk on black paper, develop a few designs that can then be used for either an engraving or an etching.
- Work out a group of simplified sketches of crowds of people — perhaps waiting for a bus or at the beach, or spectators at a game. Choose one or several to be reproduced by one of the means demonstrated in class.
- Collect examples of intaglio printing; annotate and mount in notebook.

Evaluation

- Has the student developed skills in working in one or more of the processes?
- Does the student's work reflect imagination and sensitivity to the medium?
- Has the student exhibited interest in expanding his knowledge by doing independent study?

Lithography

Printing by lithography was invented by a Bavarian, Aloys Senefelder, about the year 1798, using a fine-grained limestone. Lithography gained popularity early in the 19th century, and a number of the great artists of that period, including Goya and Daumier, made lithographs. Many of the painters in the Impressionist movement also worked in lithography using black and white as well as color. There followed a period in which the popularity of this medium declined. But in the 20th century, it has again regained much of its original popularity and has been used as an original medium by such artists as Picasso, Braque, Miró, Modigliani, and Käthe Kollwitz. In this period, many painters as well as sculptors have been interested in creating lithographic prints. As a result, new and exciting techniques have been developed.

The use of varied materials plays an important role. Techniques such as toothbrush splatter, scraped white lines, smudging, draping tusche in puddles of water, tusche-laden areas, and fine pen strokes of tusche, are employed to add special and unique effects. The following are good examples of lithographs by contemporary artists:

Eugene Berman, *Nocturne Cathedral*
Sue Fuller, *New York, New York*
William Gropper, *Paul Bunyan*
Jules Heller, *Farmer*
Max Kahn, *Blue Cat*

In the late 19th and early 20th centuries, lithography became quite popular with commercial printers. Using stones, however, restricted the printing process to flat-bed printing, which is relatively slow. Later on, zinc plates were used, which were eventually fixed to a cylindrical form so that rotary printing became possible. It is in this form that most commercial lithography is done.

Lithography differs from most of the other printing processes in that it is a planographic process; that is, the impression is taken from a flat surface. The process is

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based upon the natural repulsion between water and grease. Designs are drawn upon the grained surface of the plate or stone with grease-based inks or crayons, and the whole surface is then dampened. The face of the stone actually holds the water while the waxy or greasy surface of the design repels it. The whole plate or stone is then rolled with a printing ink which adheres to the grease drawing but not to the wet surface of the stone or plate itself.

The artist is able to draw directly on the stone or plate with the same freedom he might use in drawing upon paper or canvas. This process enables the artist to have a great deal of flexibility of expression. Drawing can be soft and diffused, or strong and sharp.

All of the early lithographs were drawn on limestone, as are most of today's lithographs. However, zinc and aluminum plates have become recognized substitutes. New litho-sketch plates of treated sheets of paper, rather than a litho stone or metal plates, are a recent development. For a school that does not have stones, this is an alternate way of introducing lithography to high school students.

Lithography as a graphic process is capable of great refinement and subtlety. It is capable of rendering large, bold images and delicate drawings.

Demonstrate and discuss —

- Use and preparation of the stone
  - moistening
  - applying graining powder
  - grinding the surface
  - drying the stone
- Tracing the sketch or drawing directly on the stone
- Using the lithograph pencil
- Using the bridge as a hand rest
- Dusting the stone with asphaltum powder, resin powder, or talcum powder
- Brushing the surface with acid solution
- Blotting the excess acid
- Drying with towel and fan
- Setting stone aside for 24 hours or more
- Washing the surface with sponge and water
- Drying
- Spreading gum solution on the surface
- Cleaning the drawing with turpentine
- Washing the surface with water
- Keeping the stone moist
- Inking the brayer and the stone
- Placing dampened paper on the surface and covering with fiber board or heavy paper
- Using the press for printing
- Dampening and re-inking the stone
- Coating the stone to preserve the drawing for another printing session
- Using a grained zinc or aluminum plate
- Immersing plate in solution of alum and nitric acid
- Drying the plate by fanning
- Proceeding as with the stone
- Using treated paper plates

Studio Experiences

The student might

- Create several rough abstractions of a still life. Select the best sketch and draw it on a stone or plate.
- Organize several drawings based on the same subject matter as lithographs by famous artists. Use a personal approach to the problem. Obtain simple but strong value contrasts. Select the best drawing and use it for a lithograph on metal or stone.
- Work out a simplified self-portrait to be reproduced in lithography.

Independent Studio and Research Projects

- Select a sketchbook drawing to use for a stone or metal lithograph.
- Collect examples of lithography from old books and magazines, and arrange an exhibit on lithography for the bulletin board. If possible, include originals by members of the class.
- Prepare a visual presentation which will include lithographs created by such artists as Goya, Seurat, Daumier, and Picasso.

Evaluation

- Can the student differentiate between a lithograph and a woodcut or an etching?
- Has the student demonstrated the necessary skills in producing a lithograph?
- Does the student's work reflect the unique characteristics of the medium?

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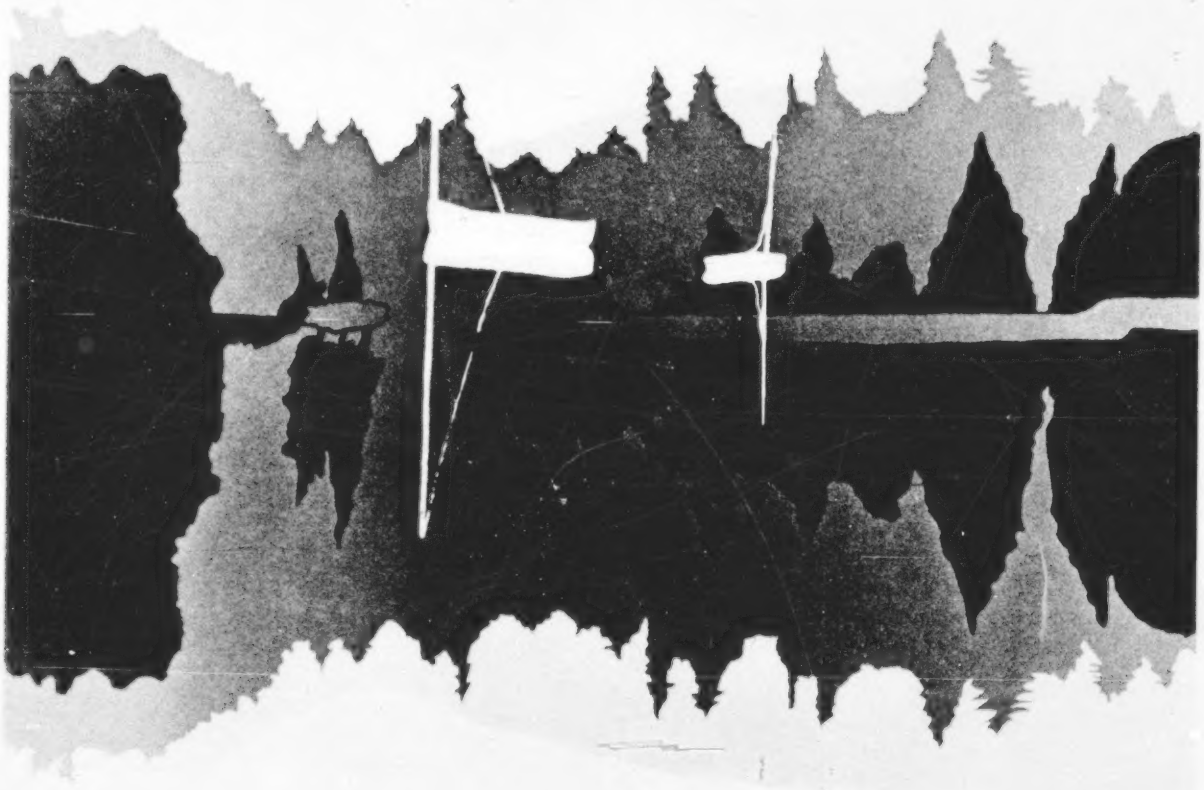

Serigraphy (silk screen)

Silk screen printing is a method of reproduction in which colors are forced through a fine mesh screen (usually silk) in those areas left permeable, other areas having been stopped out.

Silk screen is probably the most recent of the graphic processes. It developed from a rather crude hand stenciling process to a full-fledged industry employing many artists and thousands of skilled craftsmen.

Although stencil printing has a long history, the first record of silk screen printing as it is known today appeared in England in 1907 and was patented by Samuel Simon.

The process grew in America during the 1930's. Adding to its development at that time was the WPA Federal Arts Project.

Carl Zegrossar, curator of prints at the Philadelphia Museum of Arts, gave the process a new name, "serigraphy."

The pioneers of the process with outstanding technical skill and esthetic achievement include Anthony Felonis, Guy Maccoy, Hyman Warsager, Edward Landon, Elizabeth Olds, Harry Gottlieb, Mervin Jules, Ruth Gehow, and Harry Sternberg.

The silk screen print can be made to give the appearance of a transparent watercolor or the heavy impasto of a gouache or oil painting. It may be in one color or in many colors. Its versatility as both an industrial and commercial medium adds to its prominence as a graphic art. There are three primary methods of silk screening: the cut stencil method (cutting a prepared film which is then adhered to the screen); the tusche method (painting lacquer directly onto the screen); and the method of transferring the image to the screen through photography.

The past two decades have seen a great expansion in

the use of the photographic image, such as the popularization of photographic silk screening by Robert Rauschenberg, the silk screening on plastic of Louise Nevelson, and the silk screen photomatics of Andy Warhol.

Demonstrate —

- Making the stencil, using paper mask, lacquer film, tusche, glue, and if available, photography. (The latter method should be discussed and examples displayed, if equipment is not available in the art department.)
- Positioning the printing paper
- Applying the ink
- Examining the print
- Signing the print
- Cleaning the screen and the squeegee

Studio Experiences

The student might

- Choose either the tusche or lacquer film stencil method and make a design for a poster to advertise a school activity (such as a play, campaign, or athletic activity). Make several layouts and select the best, to be developed in actual size, using colored pencils or chalk to represent the colors.
- Work out a group of sketches for a landscape, a still life, or a creative design using serigraphy as a fine art form.
- Make a design suitable for reproduction on a textile. This might be a repeat pattern and can be worked out by experimenting with many ideas, motifs, and materials. (Brush and ink or tempera, felt-tip pen, or construction paper could be used to plan the design.) When a suitable motif or design has been worked out, use the tusche or lacquer film method to reproduce the repeat pattern on at least 1 yard of material.
- Work out several ideas for a greeting card. Use the tusche or lacquer film method of stenciling, whichever best fits the idea and the effect desired. In printing the cards, try different kinds and colors of paper. Exchange cards with members of the class for use in notebook.

Independent Studio and Research Projects

- After studying examples of wallpaper, create a design suitable for wallpaper and print two or more feet.
- Create a design suitable for use on a poster promoting safety or health, to be used throughout the school or community. Print the design using one or two colors.
- Study the serigraphy of a contemporary artist such as Corita Kent.
- After completing research, write a comparison between the contemporary and the traditional uses of silk screening.
- Combine two or three silk screens to make a print suitable for exhibition purposes. From this design, make a bulletin board display that demonstrates the silk screen process.
- Make a display from samples of textiles, posters, and greeting cards, which may be used for bulletin board and notebook.
- Make simple signs that are needed for various purposes in and around the school. Use the paper stencil method of printing.

Evaluation

- Has the student explored each of the silk screen processes available?
- Can the student identify a silk screen print?
- Does the student realize the potential of this process for mass production?
- Does the student's work incorporate the unique characteristics of this medium?

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Printmaking Equipment List

Woodblock and linoleum block

- bench hooks
- block-print papers and fabrics with variety of weight and texture
- brayers of good quality from 2″ to 12″ diameters
- linoleum blocks (variety of sizes)
- linoleum (unmounted)
- oil paints, or oil block-printing inks
- printer's press (high quality) which can be used for etchings, drypoint, lithography, woodcuts, engravings, or letterpress
- steel cutting tools of good quality, including V-gouge, U-gouge, and straight chisels
- woodblocks (glued shelving or pine is satisfactory)

Etching

- asphaltum
- brayers
- burnishers
- burnt plate oil
- cloths
- etching blanket or blotters
- etching ground
- etching needles
- etching trays
- files
- fine linen polishing paper
- inks
- powdered resin
- printing papers
- stopping-out varnish
- zinc or copper plates (from 4″ x 5″ to 10″ x 14″)

Drypoint

- brayer
- burnisher
- cloths
- copper, zinc, or plastic plates
- engraving burins or gravers
- etching blanket or blotter
- files
- handles
- machine oil
- plate vise
- scriber
- sharpening stones
- tracing needles

Lithography

- abrasives
- acid
- acid brush
- asphaltum
- boiled linseed oil
- brayers
- drawing bridge
- etching solution
- felt blanket
- fiber paper
- gum arabic
- inking slab
- lithograph crayons
- lithograph needles
- lithograph stones
- lithograph transfer paper
- lithograph varnish
- lithographic ink
- litho-sketch plates
- powdered garnet and flint of various grades
- powdered resin
- powdered soapstone
- press
- printing papers
- pumice sticks
- scraper
- sheep's wool or sponges
- spatula
- tannic acid
- turpentine
- tusche
- water containers (porcelain or glass)
- zinc or aluminum plates (grained)

Serigraphy

- adhering liquid
- brushes
- cutting knives
- extenders
- filler remover
- film sheets
- film (thinner-soluble or water-soluble)
- frame tape
- gummed tape
- ink or paint thinner reducer
- lacquer thinner
- liquid tusche
- mixing knives
- organdy or silk
- printing frames (with bar drop) from 9″ x 12″ to 16″ x 28″
- printing papers of different weights, textures, and qualities. (Wood, metal, or glass may also be used.)
- register guides
- retarder
- silk screen inks or paint
- squeegee
- stencil filler
- transparent base

SUGGESTED READING

Andrews, Michael. *Creative Printmaking.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964.

Brunson, John. *The Technique of Etching and Engraving.* New York: Reinhold Publishing Corporation, 1967.

Cliff, Henry. *Lithography.* New York: Watson-Guptill Publications, Inc., 1965.

Erickson and Sproul. *Printmaking Without a Press.* New York: Reinhold Publishing Corporation, 1966.

Green, Peter. *Introducing Surface Printing.* New York: Watson-Guptill Publications, 1967.

Hirsch, S. Carl. *Printing From a Stone.* New York: The Viking Press, Inc., 1967.

Kinsey, Anthony. *Introducing Screen Printing.* New York: Watson-Guptill Publications, 1968.

Rasmussen, Henry. *Printmaking With Monotype.* New York: Chilton Co., Book Division, 1960.

Weaver, Peter. *Printmaking, A Medium for Basic Design.* New York: Reinhold Publishing Corporation, 1968.

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Studio in Photography

COURSE DESCRIPTION

This is an advanced course to be elected after the student has completed a full year of *Studio in Art*. The course is designed to help students to use the camera creatively, to consider photography as an art as well as a technical operation and a hobby, and to realize its potential as a possible vocation. Although the student must become familiar with the technical aspects, the ultimate emphasis must remain with photography as an art form.

SCOPE

The course covers the development, the nature, and the function of photography, the creative use of the camera, and the various technical processes involved, including the study of the camera, film, lighting, composition, developing, printing and enlarging, cropping, and mounting. The special aspects involved with cinematography are not included. Teachers especially interested and knowledgeable in this area may develop such a course and submit it to the Bureau of Secondary Curriculum Development for approval.

COURSE OBJECTIVES

- To increase the student's understanding of the use of the camera, film, and light
- To emphasize the importance of design in the composing, printing, and display of photographs
- To interpret the developing and printing processes so that the student will realize the potentialities and limitations of the media
- To give the student opportunity to sharpen his visual perception and become more fully aware of his environment, through illustration and personal interpretation of subject matter
- To encourage the student to express his feelings about his physical and social environment as well as about himself
- To give the student a feeling of accomplishment and the tangible proof of such, as well as the pride and confidence gained through the exhibition of original work
- To acquaint the student with the importance of the advent of the camera and its use in recording history
- To acquaint the student with important historical events in the development of photography

Each student should compile a notebook which includes all class material, notes on discussions and demonstrations, titles of reference works consulted on photography, and illustrative material and related research.

A portfolio of all mounted photographs by the student should also be kept for evaluation and exhibition by the student and teacher.

Each student will be responsible for his own creative portfolio display, allowing for personal interpretation of the course. The necessity for student exhibits suggests a semiannual display or "photographer of the month" showcases.

Students may broaden their understanding of the potential of the photographic media through field trips and through contact with guest photographers.

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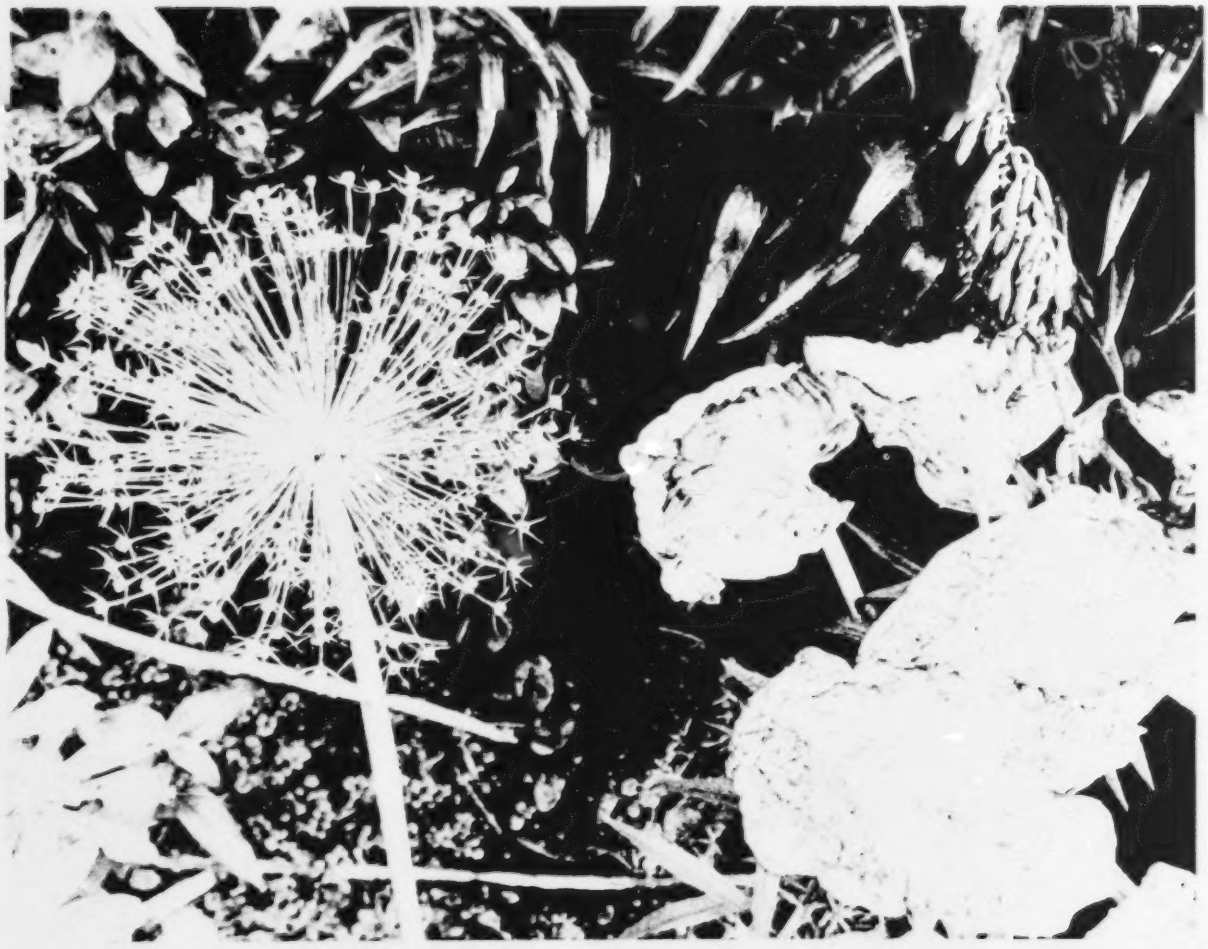

INTRODUCTION TO PHOTOGRAPHY

The Nature of Photography

Photography is a stepchild of both science and art. By nature, it uses scientific theory to produce artistic achievement. Its name, from the Greek *phos, photos* meaning light, and *graphein*, to write, was suggested by the English astronomer and physicist, Sir John Herschel, in 1839. To take this concept a step further, it could be said that the photographer designs or draws with light.

There are four essentials to photography:

(1) light, either natural or artificial
(2) chemically treated film or paper with a light-sensitive surface, that is, the surface becomes chemically altered upon exposure to a certain amount of light
(3) a light-tight chamber to contain the film
(4) chemicals to develop and fix the image in order to preserve the picture

Photography possesses certain significant properties as a medium of communication and as an art form. It is typically instantaneous; it records actuality; it is not governed by the rules of human vision; and it exists within the fourth dimension (time).

Photography is instantaneous. Most pictures are recorded in less than a second. This can be an advantage or a severe disadvantage, depending on the photographer's knowledge of his media.

One advantage is that a picture can capture motion that is too rapid for the eye to follow. Photography allows man to record this movement as either a sharp or blurred image. The camera can capture and organize details that no one consciously perceives. Fleeting actions, such as a facial expression or the motion of an animal, can also be recorded.

The disadvantage of instantaneous recording lies in the fact that the photographer, unlike the artist, cannot change his picture while the exposure is being made. All details, composition, and lighting must be worked out in advance. The photographer must work in accordance with this con-

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dition by treating every exposure as though it were his last, by infusing into it all his knowledge, skill, and imagination.

Photography records actuality. A photograph usually has more factual detail than a drawing or painting, and thus may be regarded as a representation of an actual time and place.

Photography is also a universal language. Steichen's *Family of Man* is an excellent example of a series of pictures that are universally understood.

The medium of photography is in fact so real that some photographers, through various techniques, transform the image from the natural or real to the supernatural or abstract. The viewer, while perhaps unable to recognize the subject, knows that it is derived from an actual scene or object.

Photography is not governed by the rules of human vision. Because the eyes are separated, they provide stereoscopic (three-dimensional) vision. Most cameras are one-eyed, however, and produce flat pictures (although some cameras are designed to produce special effects — such as stereographic cameras, which produce three-dimensional images.)

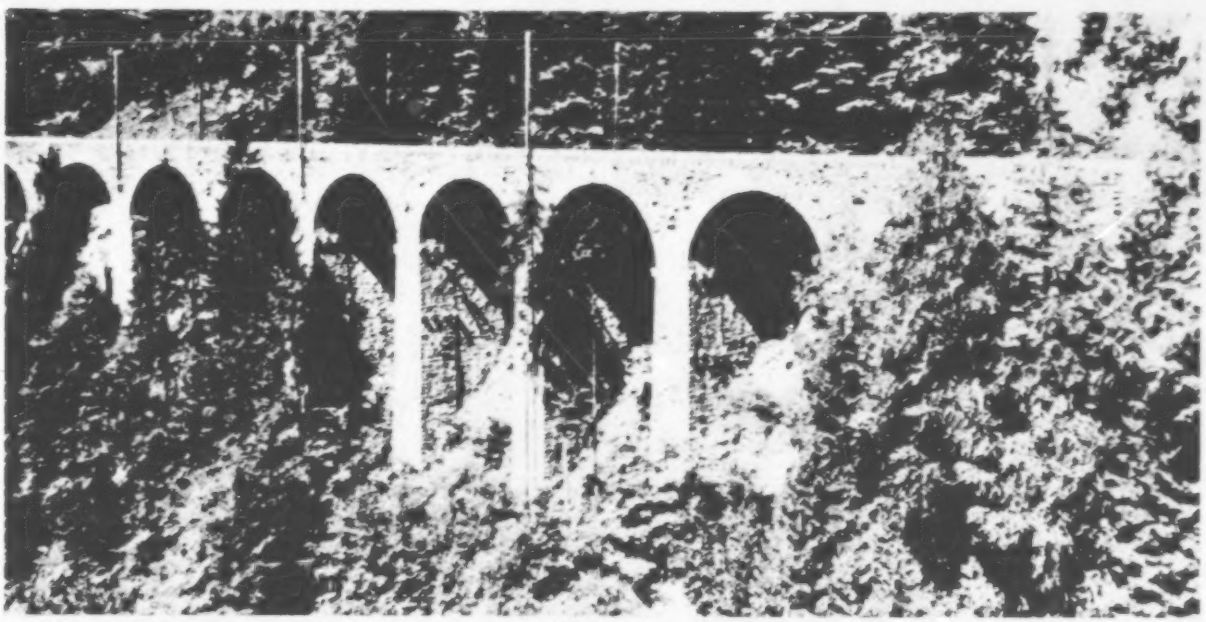
While the human eye and the camera "see" the same subject, some distortion is frequently evident in the photograph. The eye sees the distortion also, but the brain subconsciously compensates for it. The camera cannot compensate, though, and records the perspective (the relationship between an object's apparent size and its distance from the viewer) as it is, according to optical laws. Unlike the artist, who can interpret and modify his perspective, the photographer must alter or compensate for it mechanically. The most common method of doing this is by selecting the proper lens, viewpoint, and angle.

Photography exists within the fourth dimension. The element of time in art is an abstract one. Often called the fourth dimension, it is used extensively by the photographer. Photography comes closer than any other medium to capturing and preserving an instant that can never be revisited.

Historical Development

Through discussion and observation, and by means of slides, films, and prints, the following may be explored:

- The history of photography before 1700, including the camera obscura and the "magic lantern."
- The history of photography after 1700, including:
  - the work of J. H. Schulze (1725)
  - the first photography of nature made by J. N. Niepce (1826)
  - the work of L. J. M. Daguerre (1835–39)
  - George Eastman and roll film (1844)
  - Thomas A. Edison's motion picture camera (1891) and projector (1896)
  - Roentgen's discovery of X-rays (1895)
  - O. Barnack's use of the 35 mm film in a Leitz camera
  - sound motion pictures (the "talkies," 1927)
  - color photography as it is known today (1936–39)
  - early photojournalism, beginning with *LIFE* magazine (1936)
  - the uses of photography today in newspapers and magazines, advertising, science, exploration, and other fields.



The Work of Leaders in Photography

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Demonstrate and discuss —

- Early photographs of Niepce and Daguerre
- Civil War photographs of Alexander Gardner, Mathew B. Brady, and Timothy O'Sullivan, compared with photographs of World Wars I and II, notably those by Alfred Stieglitz, Edward Steichen, and Robert Capra
- Works of Edward Weston, with special emphasis on his choice of lighting, his concern and feeling for nature, and his style of cropping pictures
- Intimate-record photographs of Erich Salomon
- Social comment photographs of Dorothea Lange, Walker Evans, and Henri Cartier-Bresson
- Landscapes of Ansel Adams, Gene Smith, and Minor White
- Work of contemporary photographers in the fields of advertising, photojournalism, and the fine arts; how these photographers are aided by technological advances of the 20th century

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Photography as an Art Form

The Importance of Design in Photography

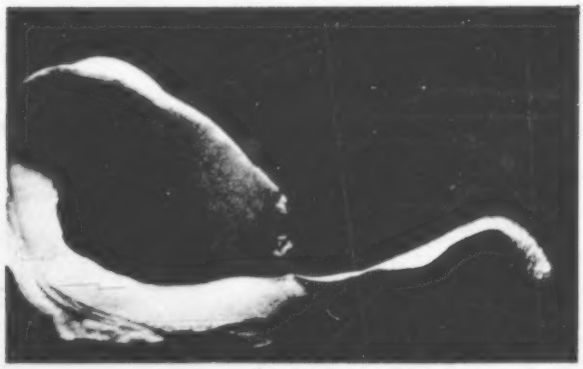
Photography in the hands of a capable, design-conscious practitioner is an art. The general concepts upon which the elements and principles of design are based are applied by the photographer to create photographs of a highly artistic nature. The photographer has at his disposal a variety of techniques and devices, including assorted screens and filters, equipment for manipulating light, various films and papers, automatic timers and light meters, special lenses, as well as many other devices. The most important asset, however, is a creative, perceptive eye. The alert photographer who both consciously and subconsciously employs the concepts of design can be a creative artist.

Camera

Demonstration and Discussion

The teacher can present the basic essentials of the camera through demonstrations and discussions. To further illustrate these, a comparison between the camera and the eye can be made.

- The lens of both the camera and the eye collects, refines, and focuses light rays. Discuss how glasses can refocus a student's vision. Demonstrate with a magnifying glass and a piece of white paper how light is refined.
- The diaphragm and its function of controlling the amount of light entering the camera should be discussed. The diaphragm, unlike the self-adjusting pupil of the eye, must be manually adjusted for different light conditions. After setting the shutter on "time" and directing a light into the lens, slowly move the diaphragm from the largest opening to the smallest, with the shutter open. Explain fully the f-numbers on the aperture scale.
- The camera's shutter functions much as the lid of the eye. Until it is opened, it prevents the passage of light through the diaphragm. The shutter speeds should be demonstrated using a camera with variable shutter speed. Have the class listen to the sound of the shutter at different speeds. The speeds may be shown by darkening the room and placing a flashlight behind the lens of an open camera, then releasing the shutter at different speeds.
- Light-sensitive film located at the back of the camera records the image in an inverted position. Compare this with the retina of the eye.



- After these basic explanations are understood by the class, the same components of a camera may again be demonstrated in greater detail. Include the following:
  - camera lenses of various sizes (normal, wide angle, telephoto); their uses and distinct features in gathering and focusing light
  - the relationship of f-stop to depth of field, explained through photographs or slides
  - shutter speeds
  - the remaining parts of the camera
  - the various types of cameras
  - the care and cleaning of cameras and lenses

Film

Demonstration and Discussion

At this point a thorough discussion of film — its composition, use, and exposure — should be presented to the students through illustration and demonstration.

- Film is composed of a base material, usually acetate, coated with a light-sensitive particle emulsion.
- Discuss fully the process of exposing the film, as well as the various type of film available. Include a thorough discussion on the ASA number and its relation to light.
- Discuss the formula for proper exposure (exposure = f-stop + shutter speed). Introduce exposure tables to be used as preliminary guidelines, and explain factors that determine underexposure and overexposure.
- To provide a thorough understanding of exposure, demonstrate the use of exposure equivalents in determining various depths of field.
- Demonstrate the loading and unloading of film in the camera.
- Demonstrate the procedures for taking a picture, determining the exposure, and adjusting the f-stops and shutter speeds, by creating mock situations in the classroom. If a light meter is used, a demonstration and explanation of this device should be given.

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Suggested Student Activities

The student might

- Load a camera and determine the proper exposure, using an exposure chart or a light meter. Take a picture at the correct exposure. Purposely overexpose a second picture of the same subject by changing either the f-stop or the shutter speed. Photograph the subject a third time, this time underexposing it. Record the f-stop, shutter speed, time (light conditions), subject, and film type in a notebook for later reference.
- Take a series of outdoor pictures, emphasizing composition as well as textures and forms in nature.
- Take a group of pictures varying the depth of field; for example, a landscape series in which the depth of field ranges from very slight to infinity.
- Take a group of pictures of the human figure in action (such as cheerleaders, football players, track team).
- Take a group of pictures using the light meter as an exposure guide.
- Take a series of action pictures with stopping, panning, and blurring effects.

Darkroom Techniques

PROCESSING BLACK-AND-WHITE FILM

Demonstrate and discuss —

- Tank development of roll film, using a demonstration roll and water substitutes for the chemicals.
- Loading an exposed roll of film in the darkroom and processing it in the closed tank in the lighted room.
- The inspection method of film processing in the darkroom.
- The maintenance and care of negatives, including cutting, labeling, and storing.
- How to "read" negatives of the three general types: low, normal, and high contrast. This may be illustrated by placing the different examples in slide mounts and projecting them on a screen.

PRINTING

Demonstrate and discuss —

- The care and use of the enlarger and other darkroom equipment.
- How printing paper works in relation to the negative or the film material.
- The steps in making a print: developing, stopping, fixing, neutralizing, washing, drying.
- The steps in making a print in a contact proof printer or frame. (This demonstration may be made in the lighted classroom.)
- Making contact sheets from a roll of negatives under safelights in the darkroom. The contact prints can be numbered and kept for reference in a looseleaf binder with the negatives secured in glassine envelopes behind each contact sheet.
- The differences in exposure time, grain, contrast, and basic print quality that occur as a negative is enlarged. Illustrate, using a series of enlargements ranging in size from 5" x 7" through 11" x 14".
- The techniques of burning in, dodging, and flashing.
- Print quality, illustrated by high- and low-key photographs.

FINISHING

Demonstrate and discuss —

- Marking pictures for cropping, using two pieces of mat board, each shaped like a carpenter's square (or an old picture mat cut at diagonally opposite corners.)
- The technique of spotting the finished print.
- Dry mounting and presentation of the finished photograph.

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Suggested Student Activities

PROCESSING

The student might

- Go through the process of developing the film by the closed tank method, using a roll of demonstration film.
- Develop a film exposed in connection with a previous project.
- Inspect the negatives on a fully processed film for underexposure or overexposure, detail, contrast, and emulsion density, to achieve a full understanding of light and its effect. Compare data recorded in the notebook with the original exposure guide for possible corrections.

PRINTING

The student might

- Make contact prints of good negatives. After examining the negatives, select printing paper of the proper contrast for each negative.
- Experiment with various exposure times for the same negatives and observe the results in terms of relative contrast in the prints.
- Make an 8" x 10" enlargement and crop to secure the best composition.
- Make an enlargement and vary the exposure in parts of the picture by dodging and burning in.

Studio Procedures and Lighting

Demonstrate and discuss —

- Studio portrait lighting with one model and one light. Include flat, hatchet, top, bottom, three-quarter, halo, glamour, and Rembrandt styles.
- The same process, using two and three lights.
- The proper lighting for copying.
- Tabletop or still-life lighting.

Suggested Student Activities

The student might

- Photograph any of the following subjects, using appropriate lighting. Experiment with different lighting arrangements and exposures. Mount the prints and display them for class evaluation.
  - a series of formal portraits of a class member
  - a self portrait
  - a common texture and an uncommon texture
  - a subject portraying rhythm
  - a found still life, a found object, or a very common object

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Color Photography

Since both the cost and equipment for color photography are prohibitive, it is not included as part of the high school course of study. The basic theory, however, may be explained and the processes examined. Some attention should be given to slide photography and to using color negatives for magazine illustrations and advertisements. Show examples of each type and compare and contrast them to the black-and-white works previously examined. Consider the color. Is it an exact copy of nature's colors? What subjects are more effective in black and white?

Suggested Student Activities

The student might

- Take a series of closeup shots of natural objects such as flowers, shrubbery, vegetables, or rocks, to emphasize color and textural qualities under natural light. These may then be commercially processed as 2" x 2" slides.
- Take a series of color pictures of his own artwork.
- Take a series of indoor color photos of the art class in action.
- Take color slides that describe the school art program.

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- Repeat the black-and-white assignments, using color. If the laboratory is not equipped for color, have slides or prints made by a reliable color processing laboratory.

Independent Projects

The following activities are to encourage the student to explore photography more deeply and to broaden his experiences. Teachers may assign or suggest these to individual students in accordance with their interests and capabilities:

- Illustrate a selected poem, using not more than 10 photographs. Design an effective layout for mounting them.
- Mount five photographs that convey a positive or negative comment on a social issue.
- As part of an advertising campaign, take a photograph that will help to sell the product or communicate a specific idea to the viewer.
- Photograph a luminous object such as fire, moon, candle, lamp, etc.
- Display one photograph that seems to portray the essence of a school, town, country, or experience.
- Do a photo story about a close acquaintance. Limit the number of photographs to 14, and mount them either individually or in a story sequence.
- Print one good negative 15 different ways so that each print makes a different picture.
- Tell by means of one 11" x 14" photograph what photography means to the student.
- Take a series of black-and-white photos of various student activities. Include both group shots and close-ups of the students in action. After careful cropping and enlarging, work out a composition for a double-page spread montage for the school yearbook.
- After the necessary individual research and consultation with the teacher, develop a plan for a home darkroom.
- Select a particular event or historical discovery that students feel had great influence on photography as we know it today, and write a composition on this topic.
- Develop a roll of film taken in connection with a previous activity. Mount, display, and evaluate the results with the class.
- Shoot candid portraits of people, characterizing the type of person photographed.
- Take several editorial portraits that reveal something about the person photographed. Photograph a beautiful girl and a homely man, or vice versa. Mount, display, and evaluate the portraits with the class.
- Photograph, mount, and display a group of opposites, such as:

love/hate	in/out
age/youth	up/down
humor/sadness	near/far
good/evil	now/then
fear/security	yes/no
hard/soft	real/supernatural

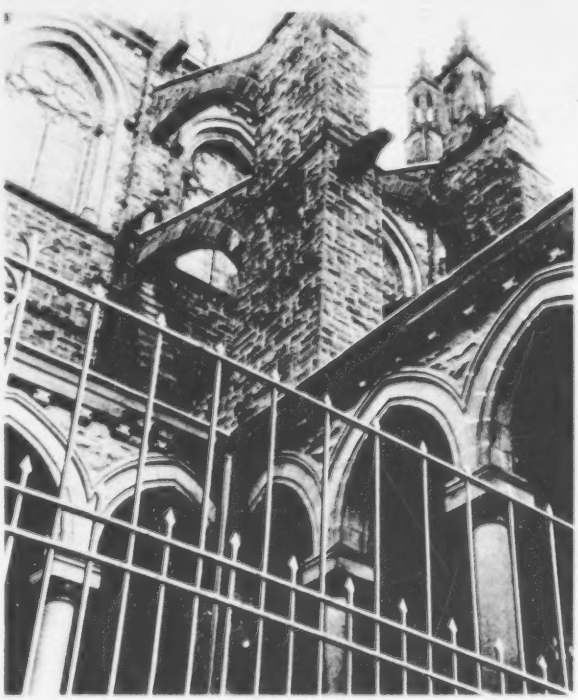
- Work out a photographic essay that shows a feeling about a particular subject such as war, integration, love, religion, intolerance. Take the necessary pictures and develop, enlarge, print, and mount them in a presentation album. Work out an appropriate cover photograph and title.

Evaluation

- Has the student demonstrated reasonable competence in the following techniques?

camera manipulation	finishing
film processing	displaying
printing and enlarging	

- Do the student's photographs reflect an understanding of design in composing, printing, cropping, and displaying?
- Do the photographs in the student's portfolio indicate that he has utilized a wide range of the various processes and techniques discussed and demonstrated in class?
- Has the student used photography to express feelings about his physical and social environment as well as about himself?



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Photography Equipment List

The Darkroom

The darkroom must be totally dark, relatively dust free, and should be used only for photography. It must be equipped with electrical outlets, a sink with running water, good ventilation, safelights, storage cabinets, and adequate working space for developing, printing, and enlarging. It must be separated from the classroom by a double door or light baffle to permit access without admitting light.

Camera work

- cable releases
- cameras
- exposure meters
- films
- filters
- interchangeable lenses (telephoto, wide angle)
- tripods

Chemicals

- developer: film, paper
- fixer
- hypo neutralizer
- photo-flo
- reducer
- stop bath
- toners

Finishing

- adhesive spray
- dry mounting press
- dry mounting tissue
- mat board
- print rollers
- tacking iron
- yardsticks, rulers

Film processing

- bottles (plastic): quart, half-gallon, gallon
- can openers
- film clips
- funnels
- glassine envelopes
- graduates (16 oz.)
- rubber gloves
- scissors
- sponges
- stirring rods
- tanks & reels
- thermometers
- timers

Printing and enlarging

- contact printing frames or contact printer
- dust brushes
- easels
- enlargers & lenses
- enlarging timers
- paper: contact, enlarging
- paper cutter
- paper safe
- polycontrast filters
- print dryer
- print washer
- spotting fluid & brushes
- tongs
- trays (8" x 10" or larger)

SUGGESTED READING

This bibliography is intended to list some of the most useful and readily available publications on the subject of photography. Anyone interested in more than simple "snap shot" photography should become familiar with the Kodak pamphlet series. The various volumes of the *Life* Library of Photography are full of practical advice, as well as theory presented in easily understandable terms. The books by Ansel Adams are relatively technical, but are required reading for anyone interested in photography as a science or an art form. Some of these publications may be available from local libraries or through interlibrary loan. Most photographic equipment dealers stock Kodak pamphlets, or they can be obtained directly from Eastman Kodak, Department 454, Rochester, New York 14650. Several mail-order distributors of photographic publications regularly advertise in photographic magazines.

Adams, Ansel. *Artificial-Light Photography*. Morgan and Morgan, Inc., 1968.

———. *Camera and Lens*. Morgan and Morgan, Inc., 1970.

———. *Natural-Light Photography*. Morgan and Morgan, Inc., 1965.

———. *The Negative: Exposure and Development*. Morgan and Morgan, Inc., 1968.

———. *Polaroid Land Photography Manual*. Morgan and Morgan, Inc., 1963.

———. *The Print: Contact Printing and Enlarging*. Morgan and Morgan, Inc., 1968.

Boucher, P. E. *Fundamentals of Photography*. Van Nostrand, 1968.

Eastman Kodak Company:

Light and Film
The Print
Color
Caring for Photographs
Photography as a Tool
The Great Themes
Photojournalism
Special Problems
The Studio
The Art of Photography
The Great Photographers
Photographing Nature

Neblette, C. E. *Photographic Lenses*. Morgan and Morgan, Inc., rev. ed. 1971.

Newhall, Beaumont. *The History of Photography*. Museum of Modern Art, Doubleday, 1964.

Newhall, Beaumont and Nancy. *Masters of Photography*. Braziller, 1958.

Pittaro, E. M. *Photo-Lab Index*. Morgan and Morgan, Inc., reprinted annually with four supplements per year.

Rhode, Robert and Floyd McCall. *Introduction to Photography*. Macmillan, 1966.

Simmons, Robert. *Close-Up Photography and Copying*. Amphoto, 1961.

Taft, Robert. *Photography and the American Scene*. Dover Publications, Inc., paperback ed., 1964.

Modern Photography. Billboard Publications, monthly.

Petersen's Photographic Magazine. Petersen Publishing Co., monthly.

Popular Photography. Ziff-Davis Publishing Co., monthly.

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